Ontario's Energy Choices Conference

The Northern Perspective

June 20, 1989, Sudbury, Ontario

Conference Proceedings

Ontario

Energy leadership for economic strength.

Puissance énergétique, force économique.

Ministry of Energy | Ministère de l'Énergie

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August, 1989

Dear Delegate,

Thank you for taking part in Ontario's Energy Choices Conference in Sudbury on June 20, 1989

From my point of view, it was a great success and I value the input and insights that emerged throughout the conference. It was an excellent forum for discussing Ontario's energy choices in general and the northern perspective in particular.

I urge you to continue your active participation in the energy choices decision-making process. You might, for instance, consider raising some of the current energy issues relevant to your area of concern in ongoing presentations and projects.

We must build on the momentum that was begun in Toronto in April, expanded on in Sudbury and will undoubtedly be further enhanced at the Ottawa conference scheduled for October 13, 1989.

It is important we ensure that this vital exchange of ideas is ongoing so that we can make informed and responsible energy choices for Ontario's future. I look forward to seeing you in Ottawa.

Yours sincerely,

Robert C. Wong
Minister

90-00398/

ONTARIO'S ENERGY CHOICES CONFERENCE
THE NORTHERN PERSPECTIVE

JUNE 20, 1989
SHERATON CASWELL INN
SUDBURY, ONTARIO

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PANEL PRESENTATIONS

PLENARY PANEL ON ENERGY & THE NORTH--THE INDUSTRIAL PERSPECTIVE

SPEAKERS:

JOHN VALLEY
VICE PRESIDENT
BOISE CASCADE CANADA LTD.
TORONTO, ONTARIO

(speech not avail. at this time)

MICHAEL HUMPHRIES
SENIOR METALLURGICAL ENGINEER
FALCONBRIDGE LTD.
FALCONBRIDGE, ONTARIO

PETER DYMENT
GENERAL MANAGER
ONTARIO NORTHLAND TRANSPORTATION COMMISSION
NORTH BAY, ONTARIO

(speech not avail. at this time)

LEN DUPUIS
MANAGER, PROCESS CONTROL ENGINEERING
ALGOMA STEEL CORP. LTD.
SAULT STE. MARIE, ONTARIO

KEYNOTE ADDRESS — ROBERT C. WONG, MINISTER, ONTARIO MINISTRY OF ENERGY

PLENARY PANEL ON ENERGY AND THE NORTH--THE COMMUNITY PERSPECTIVE

SPEAKERS

JOY NEILL — 2ND VICE PRESIDENT, NORTHWESTERN ASSOCIATION OF CHAMBERS OF COMMERCE, ARMSTRONG, ONTARIO

JACK MASTERS — MAYOR, CITY OF THUNDER BAY

CHARLES FOX — DEPUTY GRAND CHIEF, NISHNAWBE-ASKI NATION

HOMER SEGUIN — REGIONAL REPRESENTATIVE, NORTHEASTERN ONTARIO, UNITED STEELWORKERS OF AMERICA, SUDBURY, ONTARIO

PLENARY PANEL ON ENERGY CHOICES--NEW DIRECTIONS IN THE NORTH

SPEAKERS

RON STEWART	DIRECTOR RETAIL CUSTOMER DIVISION ONTARIO HYDRO TORONTO, ONTARIO

DAVID CARTER	PRESIDENT SUNDRIDGE POWER NORVAL, ONTARIO

(speech not avail. at this time)

MICHAEL MEACHER	PROJECT MANAGER ICG UTILITIES (ONTARIO) LTD. TORONTO, ONTARIO

CONFERENCE SUMMATION	DR. ROBERT ROSEHART PRESIDENT LAKEHEAD UNIVERSITY THUNDER BAY, ONTARIO
KEYNOTE ADDRESS	RENÉ FONTAINE MINISTER ONTARIO MINISTRY OF NORTHERN DEVELOPMENT

OPENING REMARKS BY
DR. ROBERT ROSEHART
PRESIDENT
LAKEHEAD UNIVERSITY
THUNDER BAY

ONTARIO ENERGY CHOICES CONFERENCE
THE NORTHERN PERSPECTIVE

THE SHERATON CASWELL HOTEL
SUDBURY, ONTARIO
JUNE 20, 1989

ENERGY

GOOD MORNING - MINISTERS WONG AND FONTAINE

Ontarians enjoy one of the highest standards of living in the world, although not necessarily a direct correlation, unfortunately, we also have one of the highest energy consumption rate on a per capita basis.

Reliable energy supply is particularly important to Northern Ontario because of the predominance of energy intensive resources industries where the levels of energy use, as well as the reliability of supply, are often equally important considerations. The distributed population throughout the vast region of Northern Ontario creates distribution challenges and energy rate complications for both customers and suppliers.

Since the Middle East oil crisis of 1973, most of us have developed opinions on the various energy issues and technologies. After a period of relative tranquility on the energy supply scene, the dramatic growth in Ontario during the past six years is starting to alert us to the reality that we must be more pro-active with respect to providing for our future energy supplies.

The Conference today allows you to immerse yourself not only in the energy supply scenarios for the future but it also gives you a window on possible energy technologies. Undoubtedly, energy conservation will be one vital element of any long-term energy scenarios for Northern Ontario.

The Conference today also allows for a uniquely "northern perspective" of the energy issues facing Ontario and I congratulate the Minister of Energy for recognizing the uniqueness of Northern Ontario from an energy supply/demand perspective

I encourage the participants to speak your minds. I remind the speaker to please allow time for discussion and dialogue and remember that this is not the provincial legislature. If you can get your point across in one minute, don't take ten!

ADDRESS BY

DR. CARL E. BEIGIE
CHIEF ECONOMIST
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ENERGY OVERVIEW - THE PERCEPTIONS, THE CHOICES

ONTARIO'S ENERGY CHOICES CONFERENCE
THE NORTHERN PERSPECTIVE
SUDBURY, ONTARIO
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Ontario's Energy Choices Conference: The Northern Perspective
Sudbury, Ontario
June 20, 1989

Address by Dr. Carl E. Beigie

ENERGY OVERVIEW - THE PERCEPTIONS, THE CHOICES

I am very pleased to be with you this morning and to have an opportunity to participate in this important conference. We are privileged to be living in one of the most choice-filled spots on this earth. And one of the sources of that choice is in the area of energy. Looking back, Ontario's economic development has been assisted greatly by access to abundant, reliable, and relatively low-priced energy in a variety of forms. And looking ahead, assurance that those choices will continue to be present will be essential to sustaining our expansion over time. Ontario's economy is highly energy-intensive, especially -- but by no means uniquely -- in our resource industries.

The energy scene over the past 20 years or so has seen a host of challenging developments. The oil crisis of the 1970s appeared to break the pattern of virtually unlimited supplies of energy at quite low cost. Sharply higher prices altered the traditional relationships between economic growth and energy use. These prices forced decisions-makers in the economy to increase efficiency in energy usage, and to a significant extent they did so. But energy prices, especially when expressed in so-called "real" (i.e. inflation-adjusted) terms, have stabilized and even fallen for a time. Meanwhile, strong economic growth since the 1981/82 recession has combined with lower real oil and gas prices to generate significantly increased energy demand.

Ontario, it seems clear to me, is facing some increasingly tough energy choices as a result of the economic growth we <u>expect</u> to continue. We consume a wide variety of types of energy, but there is one quite dominant "indigenous" energy source, namely electricity. In the past six years alone, Ontario's electricity use has grown by 32 per cent. Therein lies some very challenging policy issues for Ontario's future prosperity. We have choices for keeping the supplies coming, but these choices are going to require prompt, informed decisions to keep available.

I was asked at the earlier Toronto conference to comment on where I visualize that the Canadian, and specifically the Ontario, economy will be going over the next 5 to 10 years. This span is long enough so that it will encompass at least one full business cycle (although I no longer understand what a "normal" cycle constitutes). This means at least one significant downturn, something that is clearly "overdue" by conventional wisdom, and when the next one arrives it will present some severe tests to the world's economic policy leaders. I am going to assume that these tests will be met, mainly because there will be no defensible alternative but to do so.

The dominant force in the world economy over the past decade or so will continue for at least as long into the future. That force, commonly referred to as "globalization", is expanding quickly the geographic scope and intensity of competitive pressures on industries and factors of production that had grown comfortable under one form or another of protection. We are in the midst of a major transition that differs in degree but not in kind from the adjustments that were imposed on local markets that became regional or regional markets that became national in earlier periods.

This transition is far from painless, especially for North America. Lulled into complacency by natural resource abundance, this part of the world economy is suffering a serious erosion in its economic status because its citizens, in general, neither understand the meaning and importance nor practise the rules of individual and collective discipline. Instead, we mouth support for, and elect political leaders who extol the virtues of free-market economics without knowing much about the limits of individualistic solutions to community-type problems. The power elite is doing well now, so don't worry, be happy! Meanwhile, those societies that can and do plan effectively for the future are in the process of, as they say, "cleaning our clock".

The Canadian economy has been growing rapidly since the late months of 1982 for essentially two reasons:

* The recession of 1981/82 was so deep for Canada that it provided a solid base for considerable non-inflationary growth. (At a <u>national</u> level, the "gap" that developed between actual and potential output has been exhausted, as reflected by the fact that the national unemployment rate fell by only 0.2 percentage points from early 1988 to early 1989 -- 7.8% to 7.6% -- despite robust <u>demand</u> growth in the period.)

* The rate of participation of the population in the labour force has increased to a record level in peacetime experience. Multi-income-earner families have increased their real incomes significantly in the past five years or so, but singles and single-parent "family units" are doing nowhere near as well on average. It is my sense that these developments are placing at major risk one of the dominant sociological developments of the earlier post World War II era, namely the expansion of the relative size of the so-called "middle class" in Canada.

Neither of these developments will continue for the national economy. Indeed, the most important trends will be related to an ageing of the population and the resultant tendency for the participation rate to fall, points discussed by Professor David Foote in Toronto. (This demographic inevitability will progressively raise the policy and political importance of Canada's approach to immigration.) Therefore, if Canada is to maintain a "healthy" rate of economic growth in this potential output level, more of the gain must come from productivity improvements, but this has been an area of weakness relative to performance in the 1950 to 1975 period. Productivity is essentially a function of capital formation, which is in turn a function of savings. Canada can obtain financing for capital formation rather easily, at a price; the issue is whether that financing reflects our savings or those of some other society (payment for the use of which will serve as a major offset to future Canadian growth available for distribution to Canadians). Thus my preoccupation with excessive consumption in North America at an individual and a collective (i.e. governmental) level.

I have been talking thus far of the North American or of the national Canadian scenes. Ontario, or more accurately, southwestern Ontario, has been dominating the national economy thus far in the post-recession period. There are a variety of reasons for this fact, but one stands out in my mind -- Ontario had become a relatively cheap labour area. Let me explain carefully what I mean by this.

International competitiveness reflects an interplay of three basic forces -- productivity, factor costs, and the relative value of the national currency (i.e. the exchange rate). Canada's national productivity in non-extractive sectors remains far below that in the United States. In one major sector, however, the automotive industry -- Canadian productivity has become the equal of U.S. productivity because of the 1965 auto pact. This sector is heavily concentrated in southern Ontario.

Back in 1970, when the Canadian dollar was "pegged" at U.S. $0.925. the automobile union -- an "international" at that time -- extracted a commitment from the producers to maintain nominal wage "parity" between the two sectors of the now-integrated industry. When the Canadian dollar was released from its "peg" in 1970, it initially rose toward parity and beyond through mid 1976. But then the dollar slid to roughly U.S. $0.70 by 1985. Meanwhile, Canadian automotive productivity remained highly competitive with U.S. automotive productivity and Canadian automotive nominal wages stayed on a parallel course with U.S. automotive nominal wages. The result was a decided competitive advantage for the Canadian automotive sector, an advantage that has been moderated but by no means eliminated by the relative strengthening in the Canadian dollar over the past several years.

Passage of the Canada-United States Free Trade Agreement has broadened the relative attractiveness of manufacturing activity in Canada to many more sectors than the automotive. Even the anticipation that the FTA would be signed acted as a strong magnet for economic activity in the locationally attractive Golden Horseshoe at the western end of Lake Ontario. The rest of this vast nation is nowhere near as favourably situated locationally or industrially, and this situation must be averaged in with that in southern Ontario in determining the relative value of the Canadian dollar over the next decade.

What I have been saying tends toward a very positive outlook for growth in Ontario and this view is implicit in the position that some business people I have been talking with have taken regarding the Canadian dollar. Parity with the U.S. dollar, they argue to me, is inevitable. My own political sense is that while our dollar may rise somewhat higher over time, parity would simply be unsustainable throughout most of the country. Therefore, over the longer term actions will be taken to keep our dollar down for regional development purposes (by, say, a significant narrowing, and possibly even a reversal, in the Canada-United States interest rate spread).

If Canada's relative productivity rises because of the FTA, and adjustment via the currency is prevented from being complete, some other adjustment mechanism will kick in. That something else will be factor costs, and I would argue that the process is already well-launched. Land values have surged in southern Ontario, which is one of the main factors slowing down further migration to that area. Prices more generally have risen much more there than in most of the rest of the country. And the rapid rates of increased populations density has severely strained a broad range of social infrastructural services. It has become inevitable for some time now that relative wage rates in southern Ontario would be rising well above the national trend.

The message of what I have been saying boils down to some fairly strong lessons that Canadians are going to be forced to learn about regional economics over the next several years. In many ways this is a strange message for a country with the kind of regional diversity Canada possesses. But that diversity has led to political science-type diagnosis and commentary much more than to economic analysis that would be familiar to, say, location theorists.

All of this brings me back to the theme of this conference, Ontario's Energy Choices. The one choice Ontario does not have over the next decade, at a minimum, is "cheap" energy. Indeed, I would be prepared to argue that energy availability is going to be at least as much of a growth retarding factor as anything I have mentioned thus far. There has been a great deal of what I would call hopeful talk to the effect that Ontario will grow through major expansion of the service sector, with "service" being defined broadly. Furthermore, it is often assumed, growth in services will allow us to conserve on energy demand. I am very skeptical.

For one thing, services are unlikely to thrive in areas without a manufacturing, or some fairly unique, base for generating value added. I am unimpressed with the claims of Toronto's uniqueness that I have heard, and with a weak automotive industry southern Ontario's economic performance over the past several years would have been nowhere near as robust as it was.

For another thing, it is unclear to me how much of an impact on energy demand there would be if a sudden further shift in Ontario's industrial structure toward services were to occur. There appears to have been a halt, and possibly even a reversal, in the decline in the U.S. energy intensity of growth, and I would be surprised if a broadly similar pattern were not observed in Canada. Relative energy price has proven a better predictor of energy demand growth than the industrial composition of the economy.

Only one thing is clear to me about the future: it will become different from the past. And the differences will have important implications regarding energy. In the area of pricing, to cite a particularly important issue for Ontario, there is going to be a greater reliance on market forces; price intervention of the sort contained in the NEP will be sharply curtailed as a result of the Canada-United States FTA (referred to by some as an "NEP repellant"). There will still be room, and a need for, government action to address what are clear cases of "market failure" -- e.g. in the area of environmental regulations and incentives for greater efficiency. But energy prices around the world have bottomed, and world market forces affecting oil, and North American market forces affecting

natural gas, will place a premium on efficiency in use if we are to improve our global competitiveness position. Canadian firms have recognized this fact, as evidenced by, for example, Inco's productivity record on energy use in recent years. And the search is probably going to place additional demands on Ontario's electricity supplies, demands that must be effectively anticipated in a pro-active fashion.

The reality of the economic world is usually grasped by the general public effectively and with forcefulness, but often with a definite lag. Senator Michael Kirby addressed in Toronto some of the current energy perceptions of Ontarians.

* The energy "crisis" mentality has gone, with only a lingering uneasiness regarding oil and OPEC; but this relaxation is noticeable among industry leaders.

* Public expects secure, reliable supply (turn the switch and it should come on)

* Major environmental concerns about energy production and use.

* Lack of a clear consensus on nuclear power

* Notion of large untapped and low-cost hydro sites in Northern Ontario

In Toronto, Marc Eliesen, from Stevenson Kellogg Ernst & Whinney presented the following comments on northern hydraulic supply potential:

"Most conveniently available large hydraulic sites have been developed in Ontario over the last 75 years. While major development possibilities have been identified in Northern remote areas, their potential economic, environmental and social costs make their construction unacceptable or extremely limited.

"As a safe proven technology using a renewable energy source, hydraulic generation has to be an attractive option.

"But environmental concerns, related to even limited land flooding, or changes in river flows, or transmission lines to connect to demand electricity centres, can effectively limit any further hydraulic generation role in Ontario.

"If the above can be negotiated satisfactorily in the broad public interest with the associated trade-offs among competing objectives, further hydro development should take place. The

few sites proposed by Ontario Hydro appear to be equal or less economic than current existing nuclear generating cost estimates due to the low energy capability of most remaining undeveloped locations.

"However, it is claimed that the majority proposed are comparable to fossil plant estimates, and also provide the benefit of supply diversity and peak load operational flexibility. Moreover, the hydraulic plants proposed for the northern areas of the province provide local flexibility given the economic load situation in these areas.

"I should emphasize that implementation of the above hydraulic plan will require a major effort by Ontario Hydro and Ontario government officials to ensure that some of the new hydraulic installations are developed in an environmentally acceptable manner.

"Of equal importance though, a concerted action plan is required to involve local northern communities and native groups and associations to provide the maximum positive local economic business benefits and training and employment opportunities."

Tom Kierans closing remarks in Toronto were a very effective summary:

> "(We are) fortunate in having a range of energy choices, but no consensus yet on which to choose (especially on electricity supply and environment);
>
> "But important challenges (remain) in how to increase efficiency of energy use, satisfy environmental concerns, bring on new electricity supplies;
>
> "Some of the choices are:
> - how much to rely on conservation and how much on developing supply;
> - how to address global warming/greenhouse concerns;
> - what types of electricity generation to bring on, where, when, by whom (how much private generation)
> - how much to intervene to correct market "imperfections".

Applying these conclusions to Northern Ontario:

> "(There is a) challenge to industries to increase efficiency and productivity (high energy use implies savings opportunities);
>
> (We) must reduce price vulnerability and environmental impacts by conservation;

> (We) should employ energy supply as a development tool: self-generation of power, further use of wood and waste, new hydraulic development, supply to remote communities, native participation, etc."

Let me conclude my remarks by referring back to a statement by Marc Eliesen. "In my judgement, one may gamble and be lucky, and buy a short period of time. But the alternative to not commencing to build a new major supply generating source for the future, is to draw up systematic plans for possible power rationing for Ontario's consumers and industries." I sense this is not an alarmist's perspective.

Thank you very much.

REMARKS FOR JEAN LAM

AT THE

ONTARIO ENERGY CHOICES CONFERENCE
THE NORTHERN PERSPECTIVE

JUNE 20, 1989

SUDBURY, ONTARIO

Good morning ladies and gentlemen.

At present, Ontario would appear to have few problems in energy.

Oil and natural gas prices have come down in recent years, and supplies are generally plentiful. But there are several challenges arising today and there are choices we will have to make to maintain our energy position.

My purpose here today is to explain these challenges and choices and to put them in the context of Ontario's supply and demand situation.

SLIDE ONE **Key Challenges**

The challenges that bring us to this conference are environmental and economic.

Sustainable development is a concept that comes from the Brundtland Commission. The basic idea behind it is maintaining economic growth consistent with the environment's capacity to sustain it -- building a bridge between economic development and consideration for the environment..

In Ontario, our economy depends on access to sufficient supplies of oil, natural gas and coal at reasonable prices, -- and on a reliable, efficient and low-cost electricity supply system.

Keep in mind that almost all of the oil, natural gas and coal we use comes from outside the province -- that's 80 per cent of our energy. Electricity is our only home-grown fuel.

SLIDE ONE (CONT'D)

The last point, energy efficiency, has both economic and environmental implications. Increasing the efficient use of all our energy will help to achieve economic growth and reduce environmental impacts.

SLIDE TWO Ontario's Energy Situation Now

Today, we have adequate supplies of energy that are, for the most part, competitively priced;

But our energy demand is rising because of strong economic growth since 1982, and lower oil and gas prices since the collapse of world oil prices in 1986 .

Our rising energy demand is partly offset by new technologies We have begun to use high efficiency furnaces, fuel-efficient cars and more energy-efficient industrial processes.

But demand for electricity has grown rapidly and we are approaching the point where we must make decisions on electricity.

The additional capacity that Ontario Hydro has planned should be sufficient until around the year 2000. But if demand grows at a higher rate, we will need new supplies of electricity before the end of the century.

SLIDE THREE Trends in Energy Demand, 1979-88

The graphs on this slide indicate our end-use energy demand since the last peak in the economic cycle in 1979.

Although it is not shown on the slide, it's well worth noting that our overall economic growth has been 40 per cent since 1979, while our energy use has increased by only five per cent. We have become more energy efficient, although not as much as some other countries.

However, while overall energy use increased only by five per cent, electricity use increased 36 per cent. That's a growth rate of 3.5% over the past 9 years, and most of that growth has occurred in the last six years.

Oil use has declined by 16 per cent, thanks to the massive conservation and substitution efforts of the early 1980s. But oil use started to rise again in 1986 with the decline in oil prices.

Natural gas demand increased slowly during the early 80's, but has also accelerated in the last few years as prices have fallen, and economic growth has continued.

SLIDE FOUR Growth in Energy Demand, Forecast 1988-2000

This slide shows the Ministry's latest projections for Ontario's energy use to the end of the century. Total energy use will increase by about two per cent per year. By 2000, we will need 27 per cent more energy than we do today.

Overall, oil use will be up by 18 per cent, natural gas by 27 per cent, electricity by 39 per cent and coal by 41 per cent.

There are two comments that I'd like to make about these figures.

First, the anticipated increase in the demand for electricity is slower than the growth in recent years. The Ministry and Hydro agree on this forecast. But it does not consider what can be done to reduce demand through broadly based demand management programs. It may be possible to control that increase in demand by one third according to Ontario Hydro's targets.

Secondly, the coal use is industrial coal use, primarily in the iron and steel industry and not coal used in electricity generation.

The next three slides deal with broad challenges we face. I've grouped them under the headings of economic growth, the environment, and energy efficiency.

First, the economic growth challenge.

SLIDE FIVE Economic Growth Challenge

At one time, economic growth meant lock-step growth in demand for energy. That's no longer completely true.

In the late 1970s and early 1980s, our experience in the energy crises of the time showed that less energy could be used while the economy continued to expand.

Today, we have to become more-energy efficient without being prodded by spiraling energy prices.

Both energy production and energy efficiency have economic impacts.

We're all familiar with the fact that energy production creates jobs -- through construction of generating stations, pipelines and transmission facilities.

But energy conservation also creates employment -- through home renovation, retrofitting buildings and more efficient industrial processes.

SLIDE FIVE (CON'T)

Industrial competitiveness is very important in the global economy. People are seeking an edge by reducing the energy cost component of their products. Japan, for example, has increased its energy efficiency remarkably.

Northern Ontario's economy is particularly energy intensive. Resource-based industries require more energy per unit of output than the service or manufacturing sectors. Pulp and paper, mining and smelting are among the most energy-intensive industries and also have very competitive international markets.

Many of these industries are adding new productive capacity and introducing more modern technology. These technologies are often electricity-intensive -- such as thermo-mechanical pulping, and microwave drying.

This does increase demand for electricity but there are also opportunities for reducing energy use with electronic control, improved motors and drives. In the Ministry's forecast, demand for electricity is projected to grow most strongly in the industrial sector.

Ensuring energy supplies at a reasonable price is a key part of the Ministry of Energy's mandate.

SLIDE FIVE (CON'T)

Today, market forces determine crude oil and natural gas prices. The Free Trade Agreement makes it very difficult for either the Canadian or U.S. governments to control fuel prices to give domestic industries an advantage over their foreign competitors..

And my last comment on this slide is directed to the special challenges in Northern Ontario, where, as I've already mentioned, resource industries are energy intensive. Development of energy supplies can play an important role in local development, through hydro-electric power, cogeneration and building transmission lines, for example.

Remote communities and low population densities are also a special challenge where the cost of providing energy services, like other services, can be high.

SLIDE SIX Environmental Challenge

This slide deals with the environmental challenge posed by sustainable development. Energy is a key element because energy production and use have many impacts on the environment.

These impacts include:

- **emissions from transportation fuels -- such as lead in gasoline and particulates from diesel.**
- **carbon dioxide emissions from the burning of fossil fuels, a growing concern because of the contribution to global warming.**
- **the siting and land use issues concerning facilities and transmission lines.**

SLIDE SIX (CONT'D)

- **Nuclear generation raises concerns about the disposal of nuclear waste**

- **Hydro-electric generation has to deal with flooding, erosion, and the concentration of water-borne toxins such as mercury.**

- **And as I said before, generating electricity with fossil fuels creates greenhouse gases.**

Essentially, none of our options for generating new supplies of electricity is perfect in the environmental sense.

SLIDE SEVEN Energy Efficiency Challenge

Energy efficiency is one of Ontario's most important challenges because of the potential benefits for both the economy and the environment..

On the environmental side of the equation, more intensive and extensive energy conservation and efficiency can arrest further environmental impact.

On the economic side, greater fuel efficiency helps to lower industry's costs of production, increasing Ontario's competitiveness in global markets. In addition, lower energy costs for consumers promote economic growth by increasing spending power.

But how do you encourage less energy use per unit of output when energy prices have declined?

- we see car buyers going for high-performance rather than fuel efficiency.

- and certainly industries have less economic incentive for efficiency in natural gas use while prices are low.

SLIDE SEVEN (CONT'D)

Government initiatives emphasize the need to further improve our energy efficiency. Some of the ways to do this are listed here. I will only describe them briefly as other speakers will elaborate.

- o Information/education/persuasion is generally the lowest cost approach and is a basic part of our activities.

- o Development of new technology. For example, government helped to develop the high-efficiency gas furnace in Canada.

- o Legislation/mandating/setting performance standards, a key part of the Ministry's approach.

- o Financial incentives/price signals. Ontario Hydro will be providing incentives for more efficient electricity use, for example.

Now, in the next few slides, we'll look at our challenges and choices when we consider oil, natural gas and electricity.

SLIDE EIGHT Oil Situation

First, Oil

Ontario still depends heavily on oil, with 39 per cent of our end-use energy coming from that fuel. Demand is growing and Ontario is still vulnerable to price shocks.

In terms of supply, Ontario needs continued access to imports and strong, independent wholesalers and retailers to make the market competitive.

In Northern Ontario, small volume markets with limited choices for consumers are a problem in some communities.

Crude oil supplies from Western Canada are adequate right now, but future prospects are for dwindling light crude supplies and increased dependence on imported oil.

SLIDE NINE

On the supply side we have two main challenges.

One is to ensure that markets remain competitive through increased consumer choices so that corporate concentration does not reduce competition.

The other is to maintain access to adequate supplies of domestic and imported crude oil, if necessary through improved pipeline links for imports.

SLIDE NINE (CONT'D)

On the demand side, our challenge is to increase energy efficiency by all consumers and to invest in long-term improvements in fuel efficiency;

More fuel-switching to natural gas or electricity may be feasible, but most of the off-oil conversion has been completed.

The transportation sector is 98 per cent dependent on oil and the fuel-efficiency gains of the future are unlikely to be as impressive as those of the past.

It's a challenge for alternative fuels such as propane and natural gas to make significant gains when gasoline prices are relatively low.

SLIDE TEN Natural Gas Situation

Natural gas is our second major energy source overall, providing 30 per cent of our end-use energy.

It is our most important industrial fuel (one-third of total industrial end-use energy) and it supplies 60 per cent of household heating needs. Seventy per cent of new homes are heated by natural gas.

Natural gas supplies are plentiful at present although transportation capacity can be a bottleneck. It is a challenge to ensure that pipeline capacity is expanded at a timely and prudent pace, avoiding costly overbuilding but also providing sufficient capacity for our market.

Prices have fallen in recent years -- for example, average industrial prices fell from about $3.90 per gigajoule in 1985 to under $2.50 per gigajoule in 1988.

But prices are expected to rise with a return to a more balanced supply and demand situation. The National Energy Board projects average gas prices to rise 10 to 40 per cent in real terms over the 1987-2000 period.

SLIDE TEN (CONT'D)

For Ontario, the move to a market-sensitive system since 1985 has increased choices for buyers and sellers. For example, direct purchases now make up about 30 per cent of Ontario's consumption; prior to 1985, direct purchases were nonexistent.

Exports to the United States have increased. They are now about 1.3 trillion cubic feet per year, up from 1.0 Tcf in 1987; many forecasters see the market growing to 2.0 Tcf by 2000;

Finally, there are some relative environmental advantages to natural gas. It is a sulphur-free fuel, and produces less carbon dioxide than oil or coal combustion. But natural gas itself is a greenhouse gas and processing of natural gas involves substantial emissions of greenhouse gases.

SLIDE ELEVEN Challenges and Choices: Natural Gas

There are opportunities for the increased use of natural gas by further replacing oil and by using gas in cogeneration and parallel generation of electricity.

As I mentioned before, less regulation of the natural gas business has led to more choices for gas consumers and more market opportunities for producers. But in this situation, buyers must accept greater responsibility in making the appropriate gas supply, transportation and backup arrangements.

Consumers must make informed choices and obtain the best combination of gas supply security and price that suits their needs.

Producers must also accept greater responsibility for understanding their customers needs better, and competing for markets.

And distributors face challenges in anticipating and planning for customer requirements.

Today's market-based export regulations make it a challenge for Canadians to achieve fair market access for domestic consumers and security of supply.

SLIDE TWELVE Electricity Situation

Finally, I turn to electricity, which is Ontario's only indigenously produced major fuel.

> Ontario Hydro supplies 95 per cent of the province's electricity.
> Industries (such as Inco), private suppliers and utilities, such as Great Lakes Power, produce the other five per cent;

Today,25 per cent of Ontario's electricity comes from burning oil and coal; 49 per cent from nuclear and 25 per cent from hydraulic generation.

Demand growth has now taken up most of the province's excess generating capacity. Looking ahead the forecast increase in peak demand by the year 2000 is 8900 MW, before allowing for demand management.

SLIDE THIRTEEN **Electricity: Planned Measures**

What the information on this slide indicates is that the measures planned for the future are adequate until around the year 2000, if the most likely forecast for demand growth is accurate.

But, action will be needed on both the supply and demand sides. An increase of nearly 6000 megawatts in supply is planned, including Darlington and over 500 megawatts of new hydro power in the North. Much of Hydro's target of 1000 megawatts in new parallel generation may also come from this region.

Ontario Hydro has set demand reduction targets of 3000 megawatts, 2000 from incentive-driven efficiency and 1000 from peak-shifting.

Demand management is a high priority. We have little experience with it, and, some say demand management may not deliver the needed savings. Others say far more reduction in demand can be achieved with aggressive demand management programs.

What is needed are well-designed and marketed measures to test the willingness of consumers to reduce their electricity use or shift it to off-peak hours.

SLIDE FOURTEEN

Our major challenges are in our options on electricity.

The first two points on the slide are obvious. It will be a challenge to decide what kinds of new supply and how much demand management we will achieve.

But we also face challenges in using electricity as a development tool. New generating stations, cogeneration and extending supplies can create jobs and attract investment to the North;

And finally, as I have indicated, it will be a major challenge to sell the energy efficiency message as a viable, cost-effective alternative to more supply.

SLIDE FIFTEEN

Many of the challenges and choices will affect Northern Ontario.

- Achieving the balance between sustainable economic development and sustainable environmental development

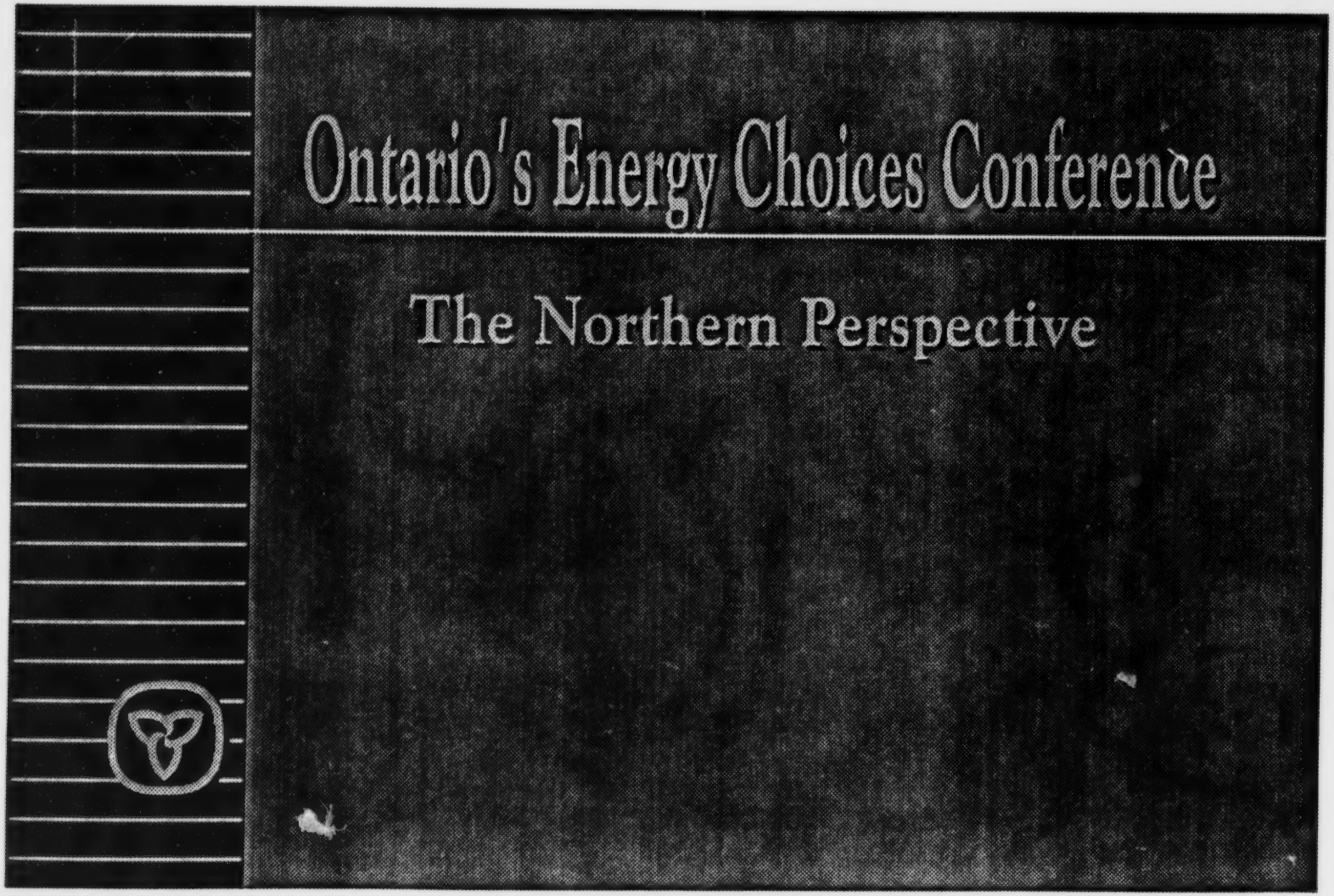
- While the first priority is energy efficiency, new supplies will be needed

- Increased energy efficiency can contribute to both our economic and environmental objectives

- and decisions will be needed to maintain a reliable electricity system.

I know you will find the message that the minister, Mr. Wong, will bring you this afternoon will be of great interest to you. He will be elaborating on many of these challenges.

Thank you.


Ontario's Energy Choices Conference
The Northern Perspective

KEY CHALLENGES

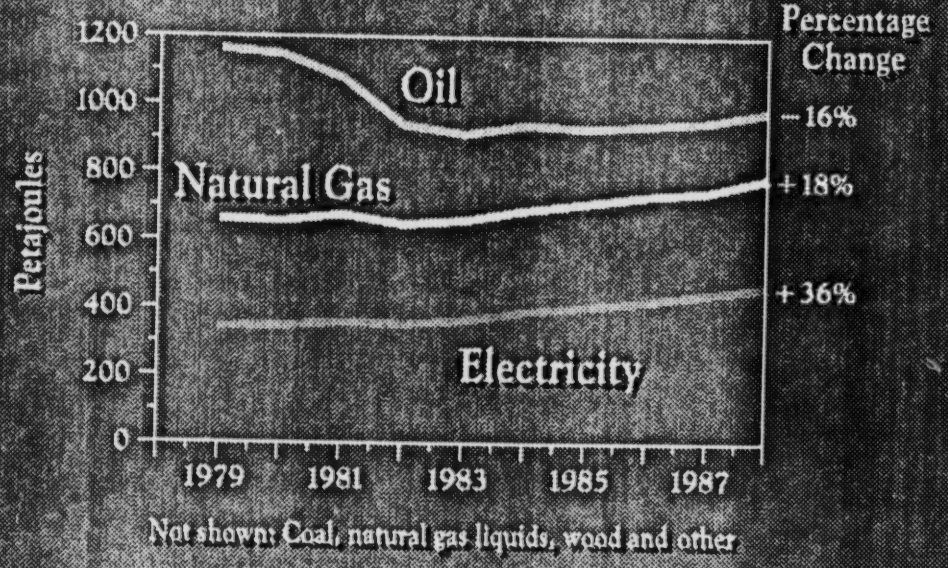
- Sustainable development
- Sufficient fuel supplies at reasonable costs
- Maintaining a reliable electricity supply system
- Increasing the efficiency of energy use

ONTARIO'S ENERGY SITUATION NOW

- Adequate energy supplies and competitively priced
- Energy demand rising because of economic growth and lower fuel prices
- Rapid growth in electricity demand has absorbed most excess generation capacity

TRENDS IN OIL, NATURAL GAS AND ELECTRICITY DEMAND, 1979 – 88

Ontario's End – Use Energy Demand, By Fuel



Not shown: Coal, natural gas liquids, wood and other

GROWTH IN END-USE ENERGY DEMAND, FORECAST: 1988-2000

(Reference Case)

	Average Growth Rate (Per Cent a Year)	Total Growth (Per Cent)
Oil	1.4	18
Natural Gas	2.0	27
Electricity	2.8	39
Coal (Industrial)	2.9	41
TOTAL	2.0	27

ECONOMIC GROWTH CHALLENGE

- Linkage of economic growth and energy use
- Industrial competitiveness
- Energy pricing is now market – based
- Special challenges in meeting Northern Ontario needs

ENVIRONMENTAL CHALLENGE

- Maintain economic growth while meeting environmental concerns
- Examples
  - industrial and energy plant emissions
  - transportation fuel emissions
  - fossil fuel combustion: carbon dioxide and greenhouse effect
  - siting of plants and transmission lines
  - nuclear waste disposal
  - hydro: flooding and erosion

THE ENERGY EFFICIENCY CHALLENGE

- Increased energy efficiency is key to environmental and economic challenges
- Improving energy efficiency is difficult when prices have declined
- Methods
  - information/persuasion/education
  - new technology development
  - legislation/mandating/setting performance standards
  - financial incentives/price signals

OIL SITUATION

- Oil supplies 39 per cent of Ontario's end – use energy
- Demand up over 2 per cent a year since 1986
- Competitive markets require strong independent wholesalers and retailers and access to imported crude and products
- Declining crude oil supplies from Western Canada

CHALLENGES AND CHOICES: OIL

- Competitive markets for crude oil and petroleum products
- Access to adequate supplies of crude oil from Western Canada and offshore
- Increasing fuel efficiency and diversity
- Transportation dependence on oil

NATURAL GAS SITUATION

- Current supplies plentiful but pipeline limitations
- Prices declining in recent years but expected to rise in future
- Greater choices for buyers and sellers
- Export volumes up from 1.0 to 1.3 Tcf per year
- Environmental advantages: sulphur–free, produces less CO_2 than oil or coal

CHALLENGES AND CHOICES: NATURAL GAS

- Opportunities for increased market share – substitution and cogeneration
- Greater responsibilities for buyers and sellers
- Reduced export regulation
- Prudent and timely pipeline expansion
- Balance between supply security and competitive markets

ELECTRICITY SITUATION

- Ontario's only major indigenous energy source
- Ontario Hydro supplies 95 per cent of Ontario's electricity
- Supply is 49 per cent nuclear, 25 per cent hydro – electric, 25 per cent coal and oil, 1 per cent purchases
- Peak demand forecast to increase 8900 MW by 2000, (39 per cent), before demand management

ELECTRICITY: PLANNED MEASURES

- Planned measures to meet demand to 2000:

Darlington	3600 MW
New hydro (planned)	
- Mattagami	400 MW
- Little Jackfish	130 MW
- Niagara	560 MW
New Parallel Generation (O.H. target)	1000 MW
Manitoba purchase (1998 – 2003)	200 MW
Demand Management (O.H. targets)	
- Incentive – driven efficiency	2000 MW
- Peak – shifting	1000 MW

CHALLENGES AND CHOICES: ELECTRICITY

- Meet future needs at lowest feasible cost
- New supply: what kind and how much?
- Electricity as a development tool
- Selling efficiency/conservation as a cost-effective viable alternative to new supply

Conclusion

Many challenges and choices will affect Northern Ontario:

- Sustainable development
- Priority is conservation/efficiency but new energy supplies will be needed
- Increase energy efficiency for both economic and environmental reasons
- Decisions needed to maintain reliable electricity system

ENERGY AND THE NORTH - THE INDUSTRIAL PERSPECTIVE

- MINING/SMELTING

PRESENTED BY M. HUMPHRIES

to the

"Ontario's Energy Choices - The Northern Perspective"

held Sudbury, Ontario

June 20, 1989

Good morning ladies and gentlemen. I have been asked to contribute to the Industrial Perspective of "Energy and the North" by giving a view of the Mining/Smelting industry. I intend to fulfil this request by relating some of the experiences and concerns of Falconbridge's Northern Ontario operations. I will show how the operation's energy consumption patterns have changed over the years and give an indication of what can be expected in the future. Energy is one of our major operating costs and as such we have some significant concerns as to how Ontario's energy future will unfold.

Falconbridge Limited is an international resource corporation which has been engaged directly and through its subsidiary and associated companies in the exploration, development, mining, processing and marketing of metals and minerals since 1928. Its products include nickel, ferronickel, copper, zinc, cobalt, cadmium and other base metals, silver, gold, platinum group metals, various metal concentrates, industrial minerals, specialty steel castings, and sulphuric acid.

Falconbridge's major Canadian operations are located in Northern Ontario - Sudbury and Timmins. The Sudbury operations consists of several mines, a concentrator, and a smelter, primarily producing a Ni/Cu matte which is refined in Norway. The Timmins operations (Kidd Creek Division) consists of a large mine, concentrator, copper smelter and refinery, and a zinc refinery

producing copper cathode, zinc metal, and several other minor metal products. These two operations employee in excess of 5,000 people.

Energy costs make up about 15% of Falconbridge's operating costs in Northern Ontario. Falconbridge spends approximately $81 MM/yr for energy - primarily electricity and natural gas. 70% of this energy is consumed at the Kidd Division. Falconbridge is Ontario Hydro's largest customer and a major customer of ICG Ontario.

Falconbridge, as is the case with most mining companies in Canada, sells its products into a world market. As such it is a price taker and has little if any control of the revenue it receives from the sale of its products. We have survived the rough economic times of the early 1980's by controlling the one portion of the balance sheet we can control - our costs. With energy being such a high portion of operating costs it goes without saying that its unit cost and consumption has come under close scrutiny.

In an energy intensive industry such as ours, process energy (energy used for melting, drying, electrolytic separation etc) as opposed to energy used to drive equipment and for heating makes up a larger portion of the energy consumed and usually gets the closest attention. There have been opportunities to improve the efficiency with which the energy has been used and in the case of Natural Gas to reduce its unit costs. The opportunities for significant savings have already been capitalized upon. There is

always going to be room for further improvement but as in any business these opportunities will only be pursued if the resources are available. Both capital and people continue to be tied up by projects with better return or to address safety or environmental concerns.

I would now like to discuss how the energy picture at each of the Northern Ontario operations has changed over the years and to discuss some of the reasons for these changes.

At the Sudbury Ni/Cu Operations electricity now makes up 64% of the energy consumed. This increased use of electrical energy is due primarily to the electric smelting process introduced in 1979 as part of Falconbridge's effort to reduce its SO_2 emissions. As far as energy costs go, electricity represents 85% of the money spent on energy. Electrical energy costs have increased at rates higher than inflation in the 1980's while savings as high as 25% have been realized in the price of natural gas since deregulation in 1985.

Since 1978 several projects have been implemented which affect the energy consumption per tonne of matte produced. Total energy consumption has decreased by 5% with "other" energy consumption (which includes fuel oil, propane, and diesel fuel) decreasing by 50% and electrical energy consumption increasing by 50%.

Some of the energy highlights for the Sudbury Operations include:

Electric Furnace Smelting: Introduced as a major component of the smelter modernization introduced in 1979 to reduce SO_2 emissions, this process consumes more energy as the level of SO_2 Abatement increases. Since 1979 the level of Sulphur removed during the up stream, fluid bed roasting process has increased from 50% to 60%. By 1994 this will climb to 65%, increasing power consumption by 20% in the furnace and 6% overall.

Energy Monitoring: As one of the first companies to be involved in the Energy Monitoring Program set up by the Ministry of Energy and Ontario Hydro, Falconbridge is currently installing an Energy Management System in the Onaping area of the Sudbury Operations. This computerized system will monitor energy consumption - electricity, natural gas, and compressed air at three mine complexes and the Strathcona Mill at a capital cost of $1,000,000. The savings expected from improved knowledge of how energy is being consumed is expected to provide a payback of 1 - 2 years.

Peak Control / Scheduled Hour Power: Demand management strategies have been in place at the Smelter Complex for several years now. As well as controlling load by automatically adjusting power to the electric furnace to minimize peak demand, the

Smelter has taken advantage of Scheduled Hour Power to shift load to the off-peak period. This Scheduled Hour Power has been replaced by Time-of-use rates. Metallurgical controls and limited in-process inventory capability limits the extent to which Time-of-use rates can be utilized.

At the Kidd Creek Division in Timmins, electricity makes up 60% of its total energy consumption. Since 1983 this increase in electrical energy consumption has taken place as Copper Smelter expansions have led to increased electrical energy requirements to produce the necessary oxygen for the process and as zinc plant production has increased utilizing more power in this highly electrical energy intensive electrolytic zinc process. As with the Sudbury Operations, electricity makes up a significantly higher portion of energy costs.

Since 1983, with the Copper Smelter in operation, the total energy consumption per tonne of metal (Cu + Zinc) produced has decreased by 25%. In the Copper Smelter the trend has been to decrease fossil fuel consumptions while electrical energy consumption has increased. In the zinc plant major strides have been made to improve electrowinning current efficiency and thus reduce electrical power consumption. The net result has been a decrease in electrical power requirements by 13%.

Some of the energy highlights at the Kidd Creek operation are:

Copper Smelter Expansion: Major innovative projects have allowed the Copper Smelter Operations to expand its capacity from 59,000 tonnes of blister copper per year to 100,000 tonnes per year since 1983. The continuous furnace line itself has not required expansion but the increased capacity has come by increasing the amount of oxygen enrichment and by modifying the acid plant. As oxygen enrichment increased the smelting process shifted from a heat deficient to a heat surplus situation. This has reduced the energy input per tonne of concentrate by 72%. Total energy input to the smelter remains unchanged despite the higher production but electrical energy needs have increased by 53% in order to meet the additional oxygen requirements.

Electrolytic Zinc Tankhouse: The most energy intensive process at the Kidd Creek Operations is electrowinning of zinc. This process consumes about 3,100 kwhrs/tonne of zinc plated. Since 1986, major efforts have taken place to improve the current efficiency and reduce electrical energy input. The current efficiency has increased from 87% to 91% with plating energy dropping by 9%. This has reduced the load required by 5 MW resulting in annual savings of about $1.65 MM.

Mine Electrication: As the Kidd Creek Mine goes deeper more and more use of electrical haulage equipment becomes necessary. The recent purchase of a Kiruna electric haulage truck is expected to save 30% of the energy that would have been required for diesel haulage and its required ventilation.

Peak Control: Both the Minesite and Metallurgical site have implemented "Peak" control to minimize the number of short term peaks in its electricity demand. It is estimated that "peak" savings of approximately 7 MW (4% of total load) have been achieved. The metallurgical site currently runs with a load factor of about 93%. Attempts to take advantage of the new Time-of-use rates are underway. The results will be minimal, however, because the plants do not have the turn-up capacity or in-process inventory capacity required to make good use of the new rate structure.

As you can see the Falconbridge mining/smelting operations in Sudbury and Timmins have made significant strides in energy conservation over the years. Opportunities for future savings will be limited by capital and people resources. As a company we support and have participated in most government and Ontario Hydro programs aimed at finding and improving upon areas where energy efficiency could be improved.

An analysis of Falconbridge's energy consumption indicates that we are relying more and more on electricity. In most cases there are not any alternate energy sources which could be used. If they did exist, the capital requirements to implement them would prohibit their use. Our electricity and natural gas requirement are essentially not switchable.

As I stated at the beginning of my talk, our industry survives and makes profits by controlling its costs. We also must run at full production with minimum interruptions to make maximum use of the large amounts of capital which are sunk into its facilities.

Falconbridge's increased use of electricity, despite overall decreases in energy consumption is not out of line with trends for Canada as a whole. Despite swings in total energy consumption as the economy changes the consumption of electricity continues to rise. This trend is also seen for consumption of energy in Ontario.

Before closing, I would like to discuss three major concerns which we have with respect to energy - its price and availability in Ontario.

<u>One</u> - Recent statements by Robert Franklin; Chairman and President of Ontario Hydro, and Dane McCarthy; Vice President - Energy Management Branch of Ontario Hydro have indicated that:

IF the recently announced demand management programs aimed at saving 4,500 MW are successful (this program has been referred to by Bob Franklin as the largest, most ambitious attempt to change the electricity habits of consumers ever undertaken by a North American utility) and

IF the private sector is able to come up with 1,000 MW of non-utility generation and

IF Ontario Hydro is able to build another 1,100 MW of Hydraulic capacity and

IF Ontario Hydro can maintain and extend the lifetime of existing plants and

IF the load growth is less than 2.7% per year (it has averaged 5.5% for the last 5 years and is running at 4% so far in 1989)

THEN Ontario's electricity needs should be met to the year 2000 but not beyond.

The time for a decision on a new major generating station is now. Our concern, which is shared by major industry associations such as the Association of Major Power Consumers of Ontario (AMPCO), is that it is already too late. We feel that at current load growth, and even if the ambitious demand management initiatives are successful, that reliability of our power supply will start to deteriorate significantly by the mid-1990's.

The situation is not unique to Ontario. The Northeastern States are already starting to experience problems. Unfortunately I think it is too late to learn from their problems, all they will be is strong indicators of what's to come in Ontario.

As a company we believe strongly enough in this upcoming problem that we have elected to forego the Interruptible Power Discount (Falconbridge is Ontario Hydro's largest interruptible power customer taking about 15% of Ontario Hydro's interruptible load) and have notified Ontario Hydro that we no longer wish to be an interruptible customer. By contract a switch to firm load will take 2 years. If all interruptible customers take the same approach an additional 600 MW of capacity will be needed.

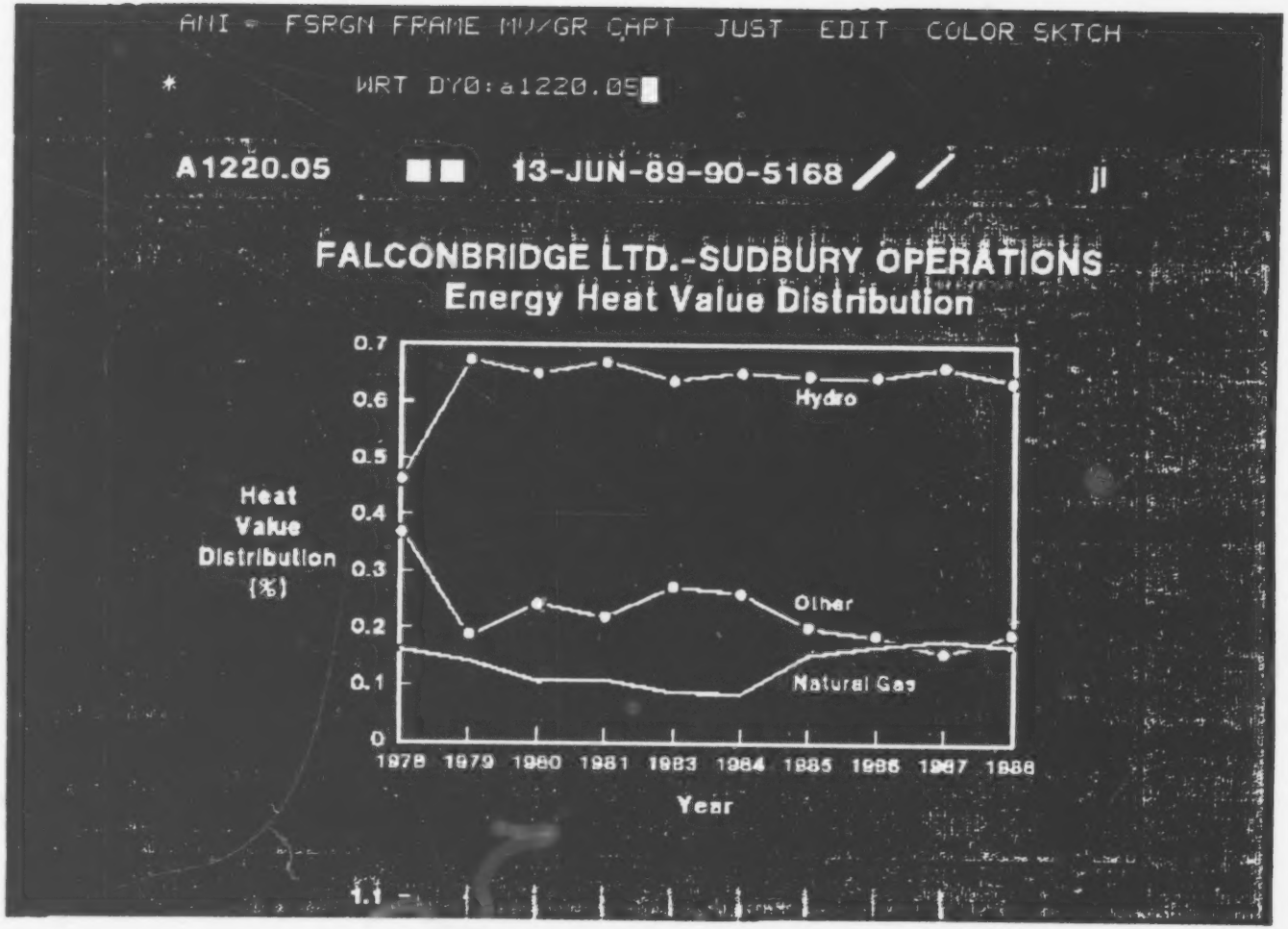
The second concern arises from the recent Ontario Budget, during which the government announced that it will be charging Ontario Hydro an annual fee of 0.5% of all its outstanding debt which is guaranteed by the province. This will cost electricity users in the province $138 MM per year (equivalent of a 2-2.5% increase in rates for 1990). For all intents and purposes this is a tax which will flow through Ontario Hydro to the government. It is inflationary and will continue to erode one of the basic principles of Ontario Hydro which is "power at cost".

The third concern is that we, both the consumers of natural gas and the Province of Ontario, do everything we can to keep the Deregulation of Natural Gas on track. There are still outstanding issues to be solved and if we, as a consuming province, are to continue benefiting from the competitive environment set up by deregulation, the problems such as core market, transportation, and security of supply must be addressed.

Energy choices in today's economy are unfortunately not black and white - the various shades of gray result from environmental and socio-economic concerns which cannot be forgotten. We must not only consider what's good for Southern Ontario but must also take the unique aspect of Northern Ontario into consideration. From the needs and concerns of our Native population to the needs of industry which is such an important part of the Northern economy.

The stage is - we look to the Government for **LEADERSHIP**.

The writer would like to thank Dave Coughlin, Techical Assistant (Waterloo Student) - Metallurgical Systems Engineering for his help in data collection and slide preparation.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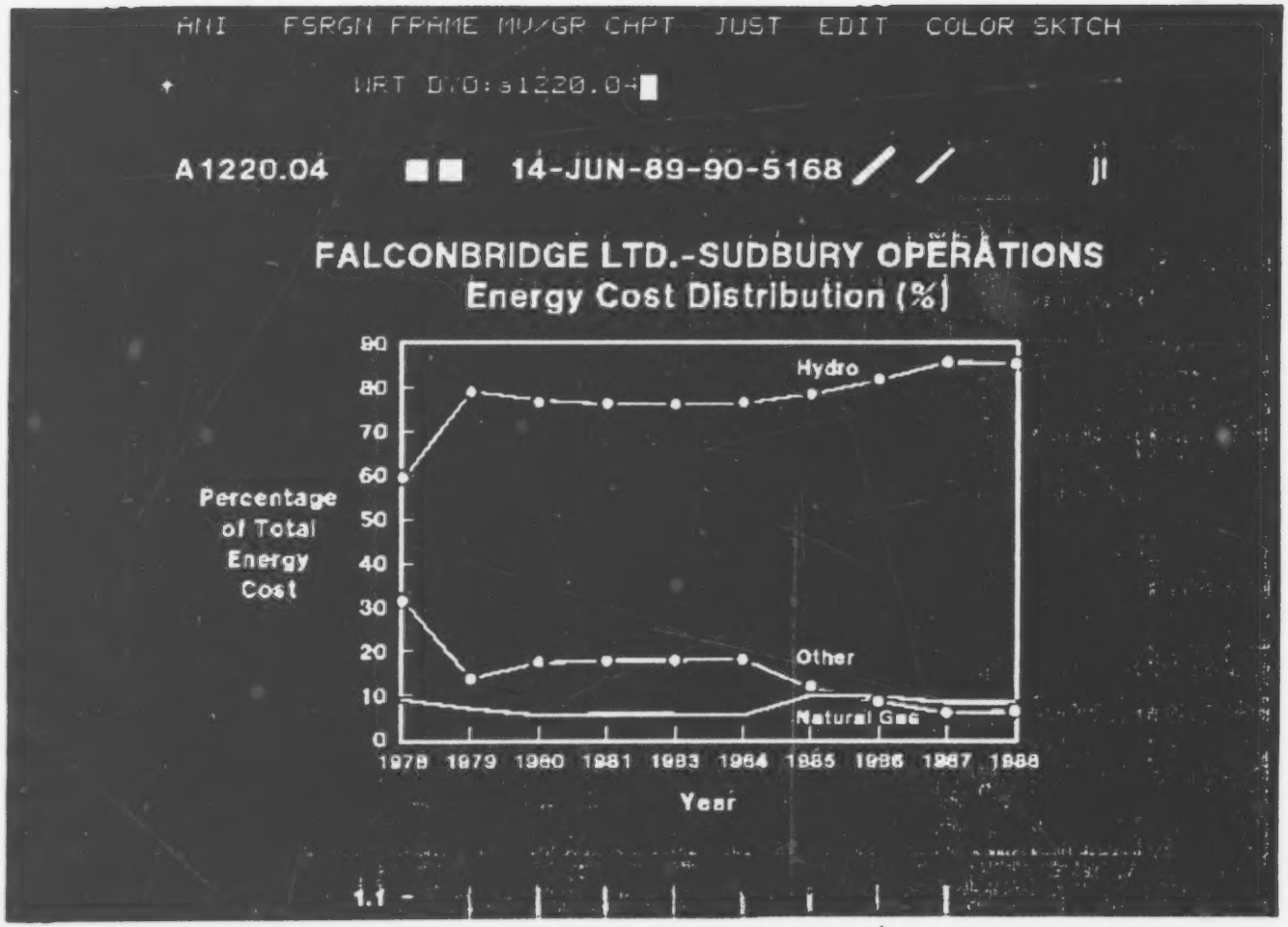
FALCONBRIDGE LTD.-SUDBURY OPERATIONS
Energy Heat Value Distribution
Heat Value Distribution (%)
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
Hydro
Other
Natural Gas
1978 1979 1980 1981 1983 1984 1985 1986 1987 1988
Year
1.1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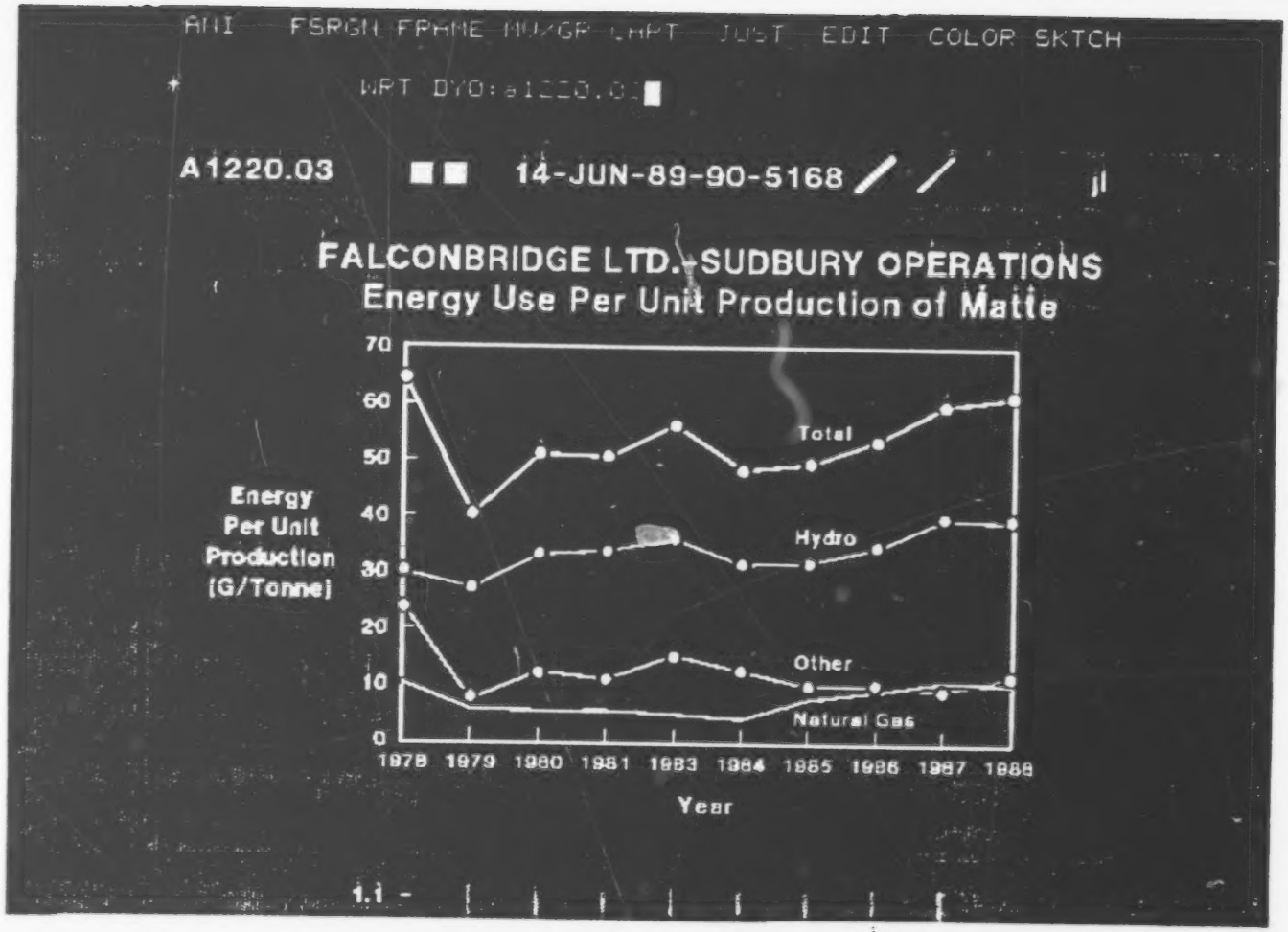
FALCONBRIDGE LTD.-SUDBURY OPERATIONS
Energy Cost Distribution (%)
Percentage of Total Energy Cost
Hydro
Other
Natural Gas
80
70
60
50
40
30
20
10
0
1978 1979 1980 1981 1983 1984 1985 1986 1987 1988
Year
1.1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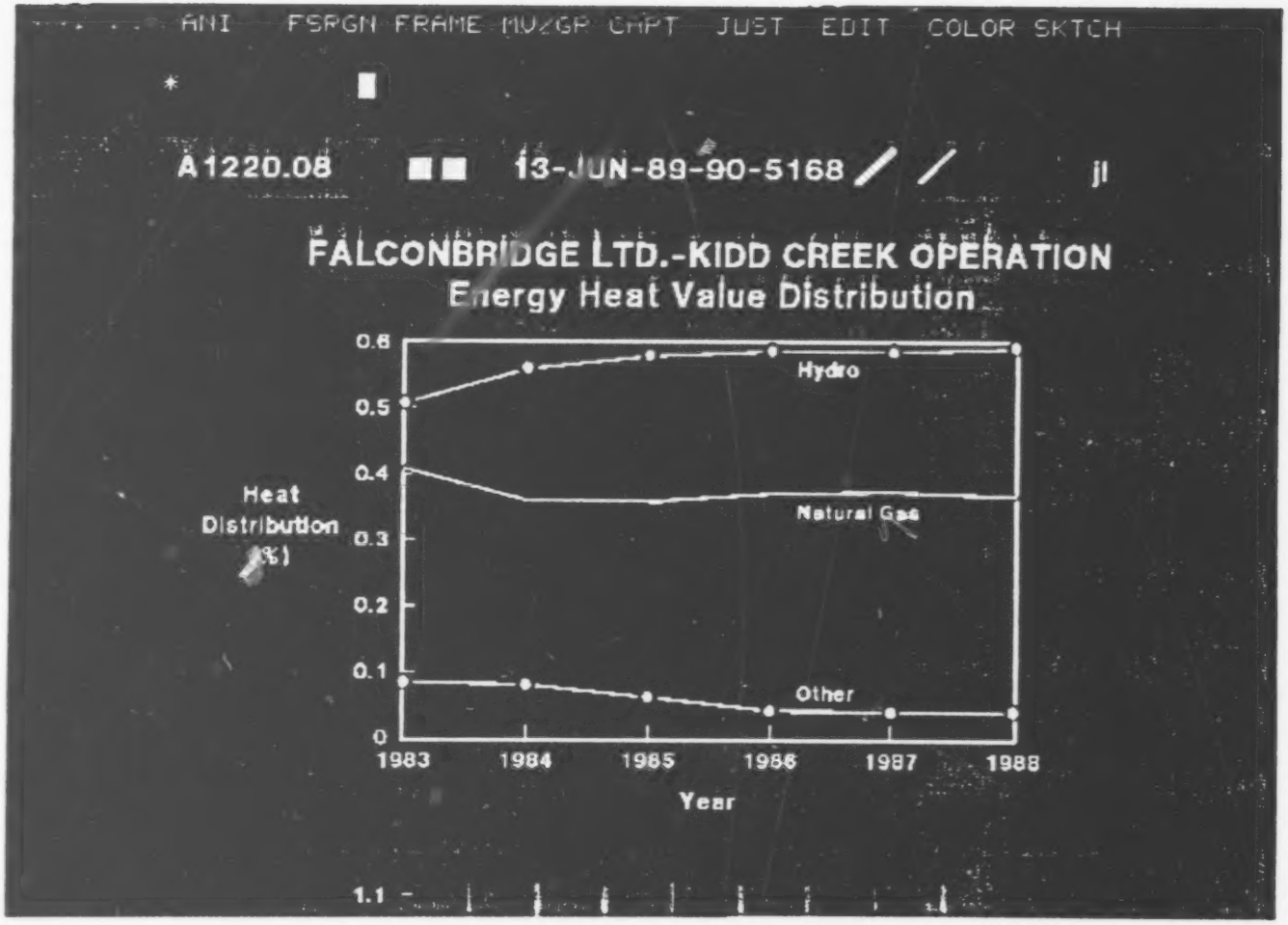
FALCONBRIDGE LTD.-SUDBURY OPERATIONS
Energy Use Per Unit Production of Matte
Energy Per Unit Production (G/Tonne)
70
60
50
40
30
20
10
0
Total
Hydro
Other
Natural Gas
1978 1979 1980 1981 1983 1984 1985 1986 1987 1988
Year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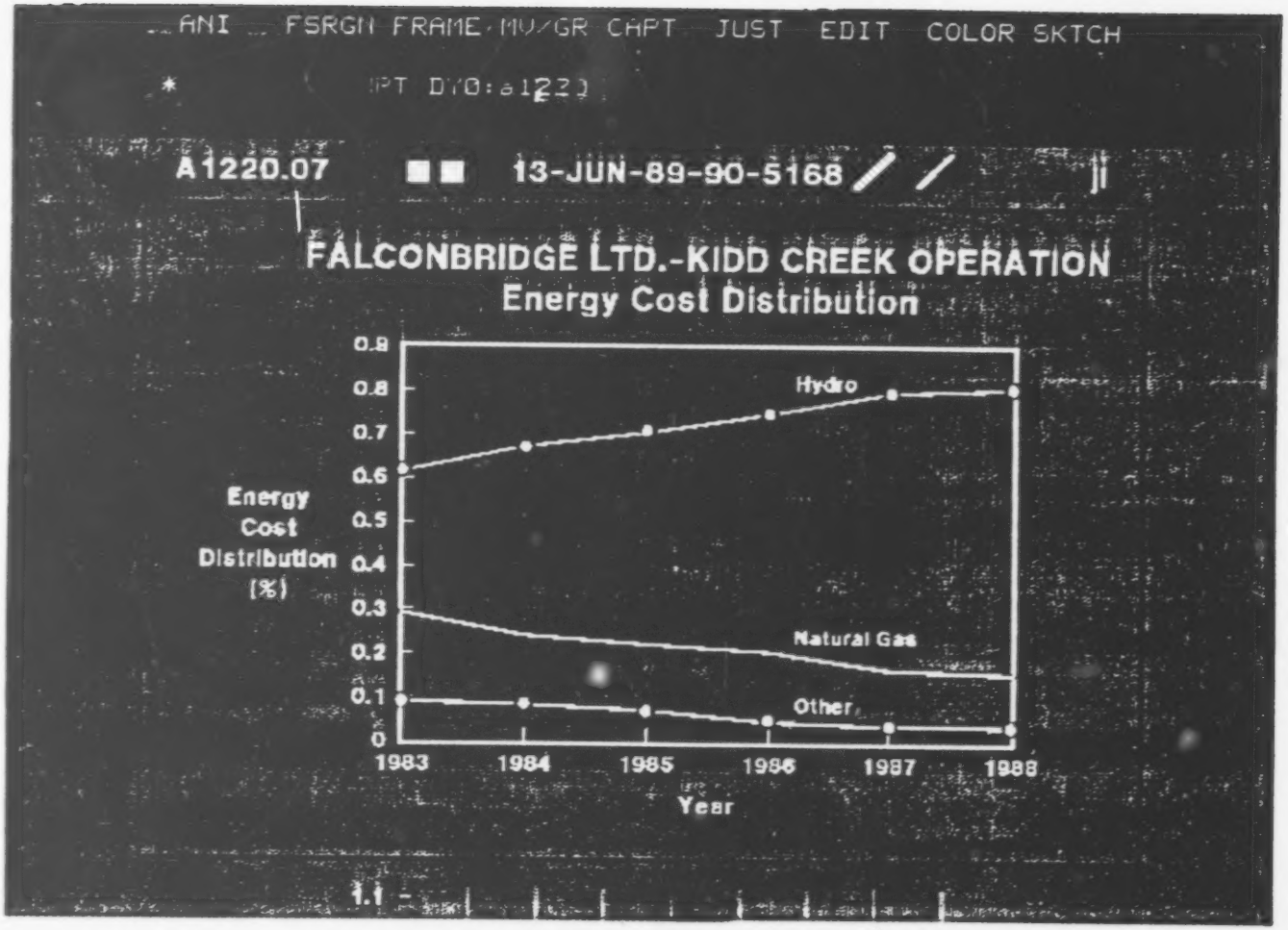
FALCONBRIDGE LTD.-KIDD CREEK OPERATION
Energy Heat Value Distribution
Heat Distribution (%)
0.6
0.5
0.4
0.3
0.2
0.1
0
Hydro
Natural Gas
Other
1983
1984
1985
1986
1987
1988
Year
1.1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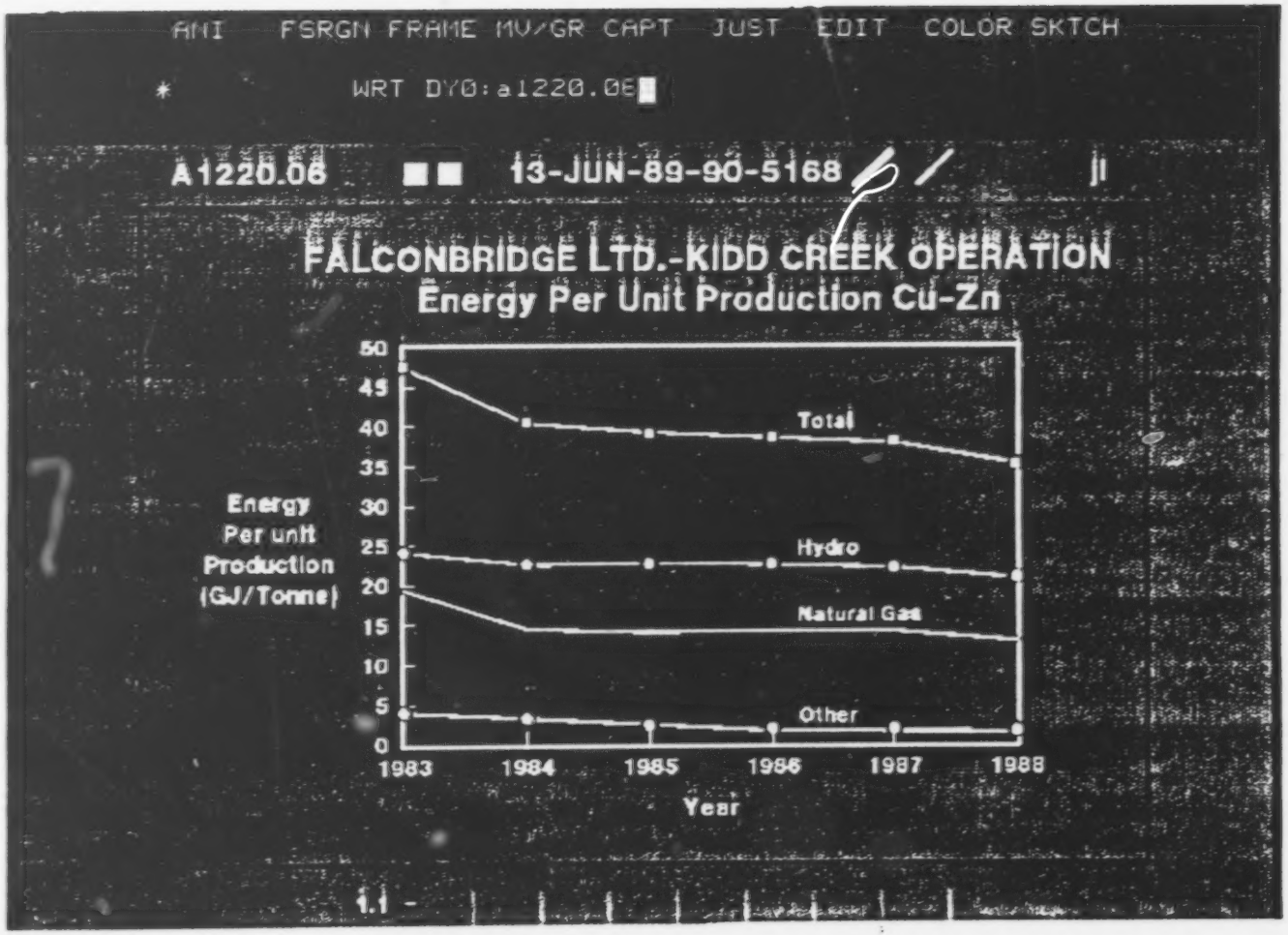
FALCONBRIDGE LTD.-KIDD CREEK OPERATION
Energy Cost Distribution
Energy Cost Distribution (%)
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
Hydro
Natural Gas
Other
1983
1984
1985
1986
1987
1988
Year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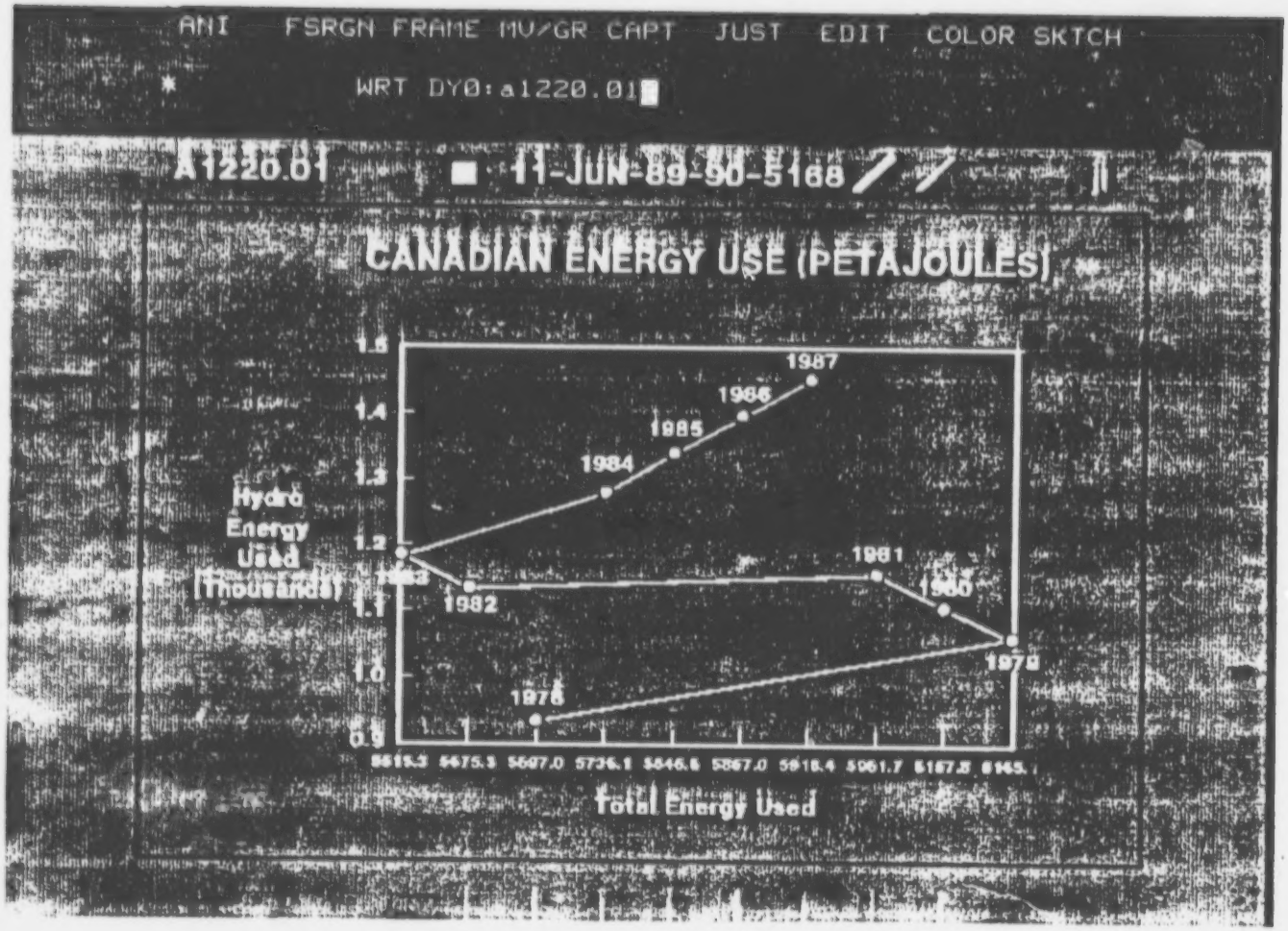
FALCONBRIDGE LTD.-KIDD CREEK OPERATION
Energy Per Unit Production Cu-Zn
Energy Per unit Production (GJ/Tonne)
50
45
40
35
30
25
20
15
10
5
0
Total
Hydro
Natural Gas
Other
1983
1984
1985
1986
1987
1988
Year
1.1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WRT DY0:a1220.01
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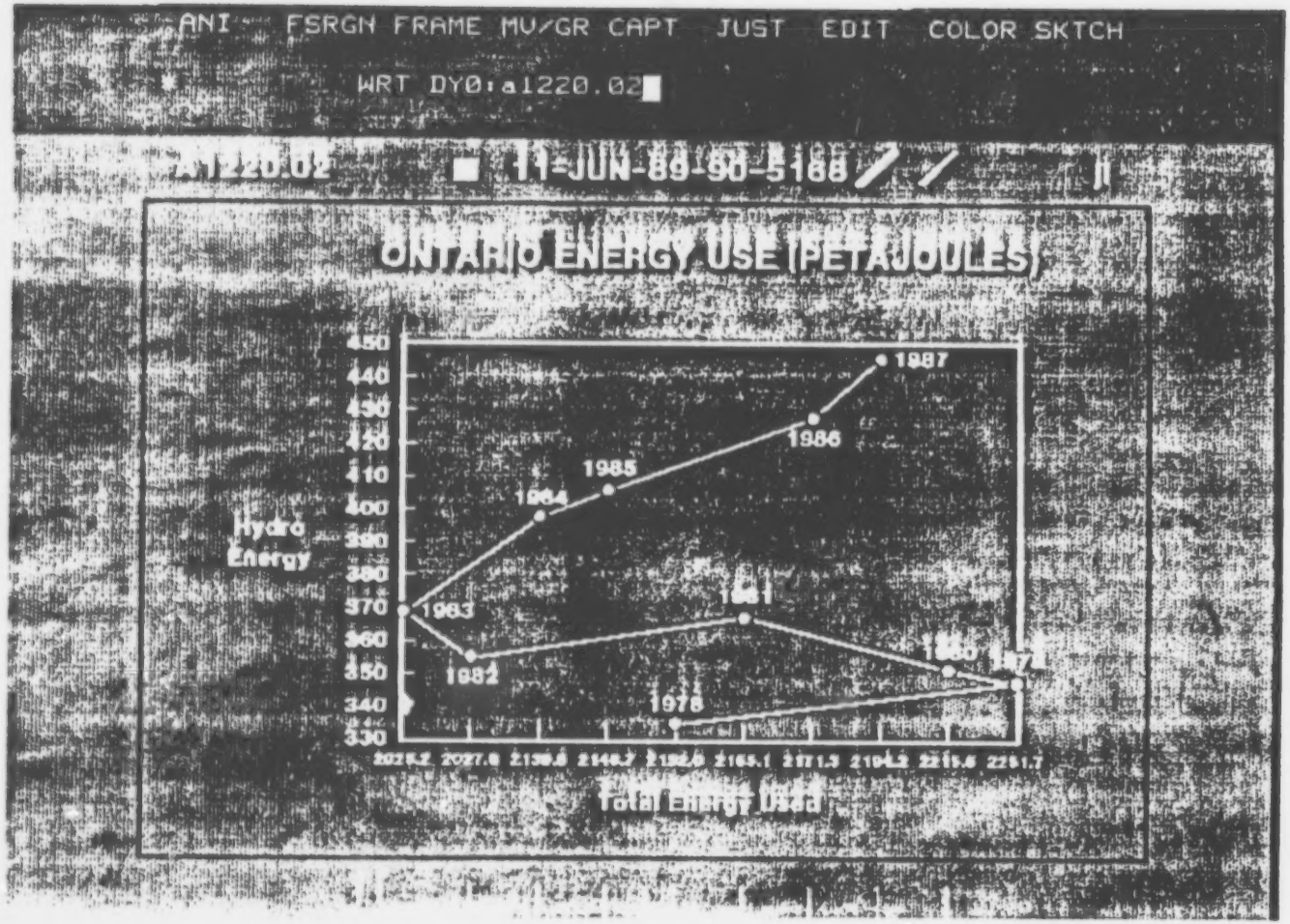
CANADIAN ENERGY USE (PETAJOULES)
1.5
1.4
1.3
1.2
1.1
1.0
0.9
Hydro Energy Used (Thousands)
1987
1986
1985
1984
1983
1982
1981
1980
1979
1978
Total Energy Used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WRT DY0:a1220.02
11-JUN-89-90-5168
ONTARIO ENERGY USE (PETAJOULES)
Hydro Energy
Total Energy Used
1987
1986
1985
1984
1983
1982
1981
1978
450
440
430
420
410
400
390
380
370
360
350
340
330

NOTES FOR
REMARKS BY

LEN J. DUPUIS
MANAGER, PROCESS CONTROL ENGINEERING
ALGOMA STEEL CORPORATION
SAULT STE. MARIE

ONTARIO'S ENERGY CHOICES CONFERENCE

THE NORTHERN PERSPECTIVE

SUDBURY, ONTARIO
JUNE 20, 1989

ENERGY OPTIONS FOR NORTHERN ONTARIO

CONFERENCE - SUDBURY - JUNE 20, 1989

I'LL START BY TELLING YOU A BIT ABOUT ALGOMA STEEL AND ITS ENERGY.

WE ARE AN INTEGRATED STEELMAKER WITH 5 MAJOR PRODUCTS PRODUCED IN SAULT STE. MARIE:

PLATE/SHEET/RAILS/STRUCTURALS/TUBES

NUMBER OF EMPLOYEES	------	APPROX. 8,600
ANNUAL SHIPMENTS	------	APPROX. 2 MILLION TONS
ANNUAL SALES	------	APPROX. $1.5 BILLION

PURCHASED FUELS (EXCLUDING COAL) CONSUMED IN 1988:

	CONSUMPTION	COST	% COST OF SALES
N.GAS	10,000,000 MFT³		
OIL	2,500,000 G	$55,500,000	5.65%
ELECTRICITY	700,000 M KWH		

M=1000

OUR ELECTRICAL ENERGY IS PURCHASED DIRECTLY FROM GREAT LAKES POWER WHO IN TURN PURCHASE CERTAIN QUANTITIES FROM ONTARIO HYDRO IN ADDITION TO THEIR OWN GENERATION.

OUR PRESENT MAXIMUM ELECTRICAL DEMAND IS 135 MEGAWATTS

OUR NATURAL GAS COMES FROM OUT WEST TO THE STRAITS OF MACKINAW IN MICHIGAN VIA GREAT LAKES GAS TRANSMISSION THEN UP TO THE SAULT WHERE IT IS DISTRIBUTED TO US BY ICG UTILITIES.

ENERGY CONSERVATION

ALGOMA HAS 2 ENERGY CONSERVATION PROJECTS UNDERWAY AND ANOTHER BEING EVALUATED.

THE 2 UNDERWAY ARE:

- RECUPERATORS FOR AIR & GAS PREHEATING ON BF STOVES WITH ESTIMATED FUEL SAVINGS OF 10%
- RECUPERATORS FOR COMBUSTION AIR PREHEATING ON A SLAB REHEATING FURNACE WITH ESTIMATED FUEL SAVINGS OF 30%

THE PROJECT BEING EVALUATED IS AUTOMATIC ELECTRICAL PEAK SHAVING USING OUR 25 MW IN HOUSE GENERATION FOR POWER DEMAND CONTROL.

ANOTHER CONSERVATION PROJECT THAT WE SHALL BE INVESTIGATING IN THE NEXT WHILE WILL BE COGENERATION TO REPLACE SOME AGING BOILERS.

AS WITH MOST ENERGY CONSERVATION PROJECTS THE PAYBACK PERIOD IS TYPICALLY 3-6 YEARS. [GIVE EXAMPLES HERE] INDUSTRY TENDS TO LOOK AT MAXIMUM PAYBACK PERIODS OF 12 TO 18 MONTHS IF THE GREEN LIGHT IS TO BE GIVEN. TO BRIDGE THIS GAP GOVERNMENT AND UTILITY SUPPLIERS, IF DETERMINED TO CONSERVE ENERGY AND FORESTALL PROVIDING NEW ELECTRICAL CAPACITY, WILL HAVE TO GET MORE AGGRESSIVELY INVOLVED, DIRECTLY OR INDIRECTLY, IN PROGRAMS THAT ACCELERATE THE PAYBACK PERIOD GIVING THE PROJECT A MORE LIKELY CHANCE OF BEING APPROVED BY SHAREHOLDERS.

ANOTHER WAY OF ASSISTING INDUSTRY IN GETTING CONSERVATION PROJECTS IMPLEMENTED, SUCH AS THE AUTO POWER DEMAND CONTROLLER, MIGHT BE FOR HYDRO TO ACTIVELY PARTICIPATE NOT JUST WITH THE FINANCIAL ANALYSES BUT WITH DETAILED DESIGN AND ANALYTICAL TOOLS TO HELP BUILD AND COMMISSION THE PROJECT AND QUICKLY GET IT TO OPTIMUM PERFORMANCE. ON OUR OWN WITH OUR LIMITED PERSONNEL RESOURCES SUCH WORK OFTEN GETS SIDELINED DUE TO PRODUCTION AND ENVIRONMENTAL PROJECT ENGINEERING.

ENERGY SUPPLY CONCERNS

LET ME START BY SAYING THAT BY AND LARGE TODAY ALGOMA STEEL IS RECEIVING ADEQUATE RELIABLE SUPPLIES OF NATURAL GAS AND ELECTRICITY AT REASONABLE PRICES. AS WE LOOK AROUND THE CORNER INTO THE FUTURE A BIT, THOUGH, WE PERCEIVE SOME REAL ENERGY CONCERNS - PARTICULARLY WITH CONTINUANCE OF RELIABLE SUPPLIES.

WITH REGARD TO NATURAL GAS, WE HAVE THE GENERAL CONCERNS AS DO MOST CONSUMERS TODAY ABOUT THE GROWING INTEREST IN CANADIAN GAS BY POTENTIALLY LARGE U.S. BUYERS, SUCH AS THE CALIFORNIA, MIDWEST AND NEW ENGLAND STATES.

CONCERNS BECAUSE:

1. THIS WOULD LEAD TO INCREASED PIPELINE TOLLS AS PIPELINE COMPANIES LOOK FOR THE BILLION OF DOLLARS TO EXPAND THEIR LINES SOUTHWARD. CURRENT NATIONAL ENERGY BOARD RULES PERMIT THE COST OF NEW CONSTRUCTION TO BE ROLLED INTO THE EXISTING TARIFF BASE SO THAT ALL CONSUMERS PAY.

2. A SUDDEN ACCELERATED DEMAND COULD LEAD TO AN INTERIM PERIOD OF OCCASIONAL SHORTAGES WITH MUCH LESS QUANTITIES OF WHAT IS CALLED INTERRUPTIBLE GAS. USERS WILL HAVE TO CONTRACT FOR MORE FIRM GAS AT THE HIGHER COST OF DOING THIS OR EXPECT MORE PRODUCTION CUTBACKS IN HIGH DEMAND PERIODS (WINTER MONTHS IN THE NORTH AND SUMMER MONTHS IN THE SOUTHERN STATES).

SOME SPECIFIC ENERGY CONCERNS TO ALGOMA STEEL ARE:

1. AS MORE GAS IS CONSUMED IN THE SAULT AREA, AS WITH THE RECENT FEED TO ELLIOT LAKE AND UPCOMING COGENERATION PLANT AT THE LOCAL PAPER MILL, IT LIKELY WILL BE MORE DIFFICULT TO CONTRACT FOR HIGHER 'FIRM' QUANTITIES AND VERY LIKELY COULD AT TIMES ALL BUT ELIMINATE 'INTERRUPTIBLE' SUPPLIES. THE LIMITATION HERE NOT BEING GAS SUPPLIES PER SE BUT LINE CAPACITY FROM MICHIGAN TO SAULT STE. MARIE. DURING THE WINTER 1988/89 WE EXPERIENCED THREE GAS CURTAILMENTS TOTALLING 92 HOURS. WILL THE NATURAL GAS BE AVAILABLE TO AUGMENT OUR BY-PRODUCT GASES TO FIRE A COGENERATION PLANT AT ALGOMA?

2. ON THE ELECTRICAL SIDE, IF AND WHEN WE WERE TO ADD A MAJOR ELECTRICAL LOAD SUCH AS AN ELECTRIC ARC FURNACE RATED AT SOME 80 MEGAWATTS OR INDUCTION HEATING, COULD WE GET RELIABLE ELECTRIC POWER TO IT? PERHAPS GREAT LAKES POWER WILL HAVE LOCAL COGENERATION POWER AVAILABLE. IF NOT, ADDITIONAL TRANSMISSION CAPABILITY WILL LIKELY BE NEEDED ACROSS THE GARDEN RIVER INDIAN RESERVATION TO THE HYDRO TIE POINT AT MISSISSAUGI. HOW LONG MIGHT IT TAKE TO WORK OUT ACCESS RIGHTS WITH THE INDIAN BAND? COULD ONTARIO HYDRO RELIABLY SUPPLY TO THIS POINT WITH ITS PRESENT TRANSMISSION LINES, GENERATION AND OVERALL GROWING DEMAND? HYDRO'S EAST-WEST TRANSMISSION CAPABILITY IS BELIEVED TO BE GETTING TIGHT.

OUTAGES AND BROWN OUTS WOULD HAVE ADVERSE IMPACT ON OUR BUSINESS. FOR EXAMPLE:

A. IF A MILL SUCH AS OUR HOT STRIP MILL COMES TO A STOP, THE COST OF LABOUR, MACHINERY SITTING IDLE AND LOST SALES OPPORTUNITY CAN RUN AS HIGH AS $50,000/HOUR. [$4,000/HOUR EXCLUDING LOST SALES OPPORTUNITY.]

THE COST OF ROLLS THAT CAN BE DAMAGED WITH HOT STEEL STALLED IN THE MILL CAN BE AS HIGH AS $50,000 EACH. EACH STAND OF OUR SIX STAND HSM HAS FOUR ROLLS.

B. ORDERS NOT SHIPPED ON TIME LEAD TO CUSTOMER DISSATISFACTION. IN TODAY'S VERY COMPETITIVE MARKET PLACE DISSATISFIED CUSTOMERS QUICKLY FIND A MORE RELIABLE SOURCE.

3. SEASONAL AND TIME OF DAY ELECTRICAL BILLINGS - HAS PLUSES & MINUS THOSE FACILITIES OF OURS THAT DO NOT OPERATE 20/21 TURNS A WEEK HAVE HISTORICALLY BEEN SCHEDULED TO RUN 10 TURNS DAYS MONDAY THROUGH FRIDAY. IT WOULD BE A MAJOR LABOUR RELATIONS MATTER TO TRY TO MOVE THESE WEEKDAY TURNS TO NIGHTS AND WEEKENDS. WE ESTIMATE WITH PRELIMINARY ANALYSIS A 3% INCREASE IN THE COST OF ELECTRICAL ENERGY WITH TIME OF DAY BILLING. WITH OUR LOCATION FROM MAJOR MARKET CENTRES, LOW, NOT EVER INCREASING ENERGY RATES, IS WHAT HELPS KEEP US COMPETITIVE IN THE WORLD MARKET PLACE.

THESE SEEMINGLY LITTLE INCREASES LIKE THE RECENT PROVINCIAL GOVERNMENT 2% CAPACITY TAX ON GLP CHIP AWAY AT A COMPANY'S PROFITABILITY AND COMPETITIVENESS.

IN CONCLUSION...AS A MANUFACTURER, IN ORDER TO GROW WE NEED RELIABLE ENERGY SUPPLIES.

1. SOME 5 YEARS AGO, HYDRO PROMOTED USE OF AS MUCH ELECTRICITY AS POSSIBLE; NOW WE'RE GETTING SIGNALS THAT THERE'S NOT ENOUGH TO GO AROUND.

2. CONSUMERS WOULD LIKE TO SEE A LONG TERM POLICY REGARDING RATES AND SUPPLY INSTEAD OF THE PERSISTENT RUMORS THAT BROWN OUTS ARE COMING.

3. ONTARIO HYDRO AND THE MINISTRY OF ENERGY NEED TO UNDERSTAND THAT AN ENERGY CRUNCH IS COMING AND A PLAN OF ACTION, NOT JUST MORE STUDIES, IS NOW REQUIRED TO PROTECT THE PROVINCE'S MANUFACTURERS.

4. SOME POSSIBLE POSITIVE STEPS OF ACTION ARE:

   - FUNDS FOR LOCAL COGENERATION PLANTS
   - INDUSTRIAL ASSISTANCE PROGRAMS FOR CONSERVATION PROJECTS
   - SERIOUS INVESTIGATIONS TO ACQUIRE SECURE POWER FROM OTHER SOURCES, SUCH AS MANITOBA
   - OR START NOW DRIVING PILES AND POURING CONCRETE!

THANK YOU ALL FOR LISTENING AND THANK YOU MR. MINISTER FOR INVITING ALGOMA HERE TO TALK ABOUT ENERGY. WORKING TOGETHER WE WILL FIND ECONOMIC SOLUTIONS THAT WILL KEEP REASONABLY PRICED AND RELIABLE QUANTITIES OF ENERGY FLOWING TO ONTARIO'S MANUFACTURERS TO HELP THEM MAINTAIN AND GROW THEIR BUSINESSES.

L. J. DUPUIS
89-06-20

NOTES FOR
REMARKS BY

ROBERT C. WONG
MINISTER OF ENERGY

ONTARIO ENERGY CHOICES CONFERENCE
THE NORTHERN PERSPECTIVE

THE SHERATON CASWELL HOTEL
1696 REGENT STREET SOUTH
SUDBURY, ONTARIO
JUNE 20, 1989

CHECK AGAINST DELIVERY

Good afternoon ladies and gentlemen.

Since I became Minister of Energy, I've been able to make several visits to Northern Ontario. Usually I'm here on specific projects.

Last year, for example, I was here in Sudbury, an area with an international reputation for mining research and development, to get a firsthand look at research into a new, energy-efficient technique in the mining industry.

My major purpose for this visit is quite different. Today, I've come to discuss broad issues in energy that involve all of us in Ontario. These are issues that will have a definite impact on those of you who live and work in the North.

We have energy choices to make, and the Northern perspective on those decisions is important to us. Energy choices will have regional impacts that will affect employment and lifestyle, as well as the availability and price of energy.

Given the importance of the choices to be made and the difficulties we will have in making them, I hope that you, as community leaders and entrepreneurs in Northern Ontario, will become active participants in this decision-making process.

Today, I'm going to discuss the challenges we face, the reality of the situation we are in, the supply and demand options open to us, and the energy policy we have in place in Ontario. And I will address some of your specific concerns as residents of Northern Ontario.

First, the challenges. One of the most important challenges we face is educating the public, and changing the public's attitude towards energy.

Back in the mid-seventies, when the world faced its first energy crisis, public interest in energy skyrocketed.

In those days, many people were well-informed on the facts of our energy situation. Today, many myths have emerged about energy in Ontario.

For example, one of the findings of a recent survey was that Ontario residents believe we have large amounts of untapped hydroelectric potential in Northern Ontario.

Few people realize that we have developed almost all of the large, economically feasible hydraulic sites in the province. Even fewer people are aware that most of the province's electricity comes from facilities in southern Ontario.

Another little-known fact is that Northern Ontario produces about 90 per cent of the electricity it uses. The other 10 per cent of the electricity used in the North comes from generating stations south of the French and Mattawa Rivers.

A second challenge we face when making energy choices is protecting our environment. We can't afford to let our use of energy rise out of control. The environmental consequences are too severe.

And our third challenge is to provide energy to maintain Ontario's prosperity by helping our industry and commerce to be competitive.

Our long-term goal is clear. We must begin finding an energy path to what the Brundtland Commission defines as sustainable development.

That is development that "seeks to meet the needs and aspirations of the present without compromising the ability to meet those of the future."

When you look at the facts rather than the myths about energy, you see that sustainable development will not be easy to achieve. The reality is that across the province, demand for energy is growing and will continue to grow as our population increases and our economy expands.

By the year 2000, Ontario's residents and industries are likely to be consuming 18 per cent more oil. Oil will continue to play a major role, especially in the transportation sector, even though its share of Ontario's energy supply has declined over the past 10 years.

By the end of the century, Ontario could be consuming 27 per cent more natural gas. Alberta will continue to be the principal supplier of natural gas to Ontario. But recently we have seen initiatives that will increase Ontario's access to alternative supplies from frontier areas and from the United States.

In Northern Ontario, along the route of the Trans Canada Pipeline, many communities have enjoyed the benefits of natural gas. The availability and relatively low environmental impact of natural gas make it useful in cogeneration projects. The ICG/Boise Cascade proposed cogeneration plant at Fort Frances is of particular interest to Northern Ontario.

And finally, electricity. In the absence of demand management measures, Ontario will be consuming 39 per cent more electricity by the year 2000

Our projections indicate we will have to act on both the supply and demand sides in electricity. Forecasts indicate that new supply will be needed within the next decade to meet demand, even if we achieve our demand management goals.

I have a mandate to ensure that Ontario has adequate, safe and secure supplies of energy at reasonable prices. I have made a commitment to make certain that we meet our electricity needs in the future.

Ultimately the government has the responsibility to approve specific options to meet our needs, and the questions I will ask about any proposed mix of energy options are:

o Do these choices enhance our industrial competitiveness and economic well-being?

o Are they sensitive to the needs of the environment?

o Do they strike a balance between conservation or demand management and new supply?

o Do they provide Ontario with adequate and secure supplies of energy at reasonable prices?

We don't yet know all the answers on the social, economic, and environmental effects of developing major new supplies of electricity. But what we do know is that increased energy efficiency must be an important element in everything we do in energy in the future

Energy efficiency has many advantages:

o it can be applied to all fuels -- to natural gas and oil as well as electricity;

o it has benefits in every economic sector; and

o it has environmental advantages.

It is for those reasons that I have made demand management, through energy efficiency and conservation, my first priorities.

Improved energy efficiency and enhanced industrial competitiveness go hand-in-hand. Just look at Inco.

The company has found ways to reduce the energy cost per unit of product by 30 per cent since 1981, and has plans to reduce it even further. By becoming a pace-setter in energy efficiency, Inco has strengthened its competitive position, and set an important example.

Other industries can make significant progress. My ministry's Industrial Energy Services Program indicates that on average, industries can achieve annual energy cost savings of 10 per cent.

Improved energy efficiency in industry is something that this government supports in a number of ways, including research and development.

I am pleased to be able to announce today that my Ministry's EnerSearch program is contributing $500,000 towards research being done by the Ferrous Industry Energy Research Association. The Association is examining ways to improve the efficiency of their steel reheating furnaces.

The research will, when completed, help make Ontario-produced steel more competitive on world markets at less environmental cost to us.

Now let me give you some examples of other actions we have taken to improve Ontario's overall energy efficiency.

I recently introduced amendments to the Power Corporation Act to empower Ontario Hydro to intensify its efforts in electricity conservation and efficiency programs.

Last year, we passed the Energy Efficiency Act and I am pleased to be able to tell you that the first regulation under that act has just been approved.

This regulation sets minimum levels of efficiency for many household appliances, including water heaters.

The Cities Energy Forum we held here yesterday is one example of how my ministry encourages energy efficiency in large commercial and institutional buildings in urban centres.

But legislation and government energy efficiency programs are not sufficient on their own. I look upon them as catalysts for broad-based demand management campaigns -- campaigns that can, and I believe will, be remarkably successful in reducing our demand and increasing our energy efficiency.

That brings me back to the challenge we face in changing public attitudes towards energy. The public hasn't yet bought energy efficiency. In fact, research presented at our first Choices conference showed that the public takes electricity for granted.

People are willing to pay for environmental improvements, but not with a decline in the supply or the reliability of our electricity.

People have yet to realize that although their own individual actions may seem insignificant, in the aggregate those small acts can have a massive impact on demand.

We can change those attitudes -- with a lot of work. Look at the initial success of the blue box program. Who would have thought five years ago that people would be sorting their garbage for recycling programs? I believe we can get the same kind of public participation in energy efficiency programs -- if we can catch the public's imagination.

Demand management is an investment -- in terms of time, effort and money. Demand management is not a short-term program designed to get us through a crunch in electricity supply in the 1990s. Environmentally, economically, and socially, it must be part of our mix of energy options on a permanent basis.

Even though we will make gains in energy efficiency, developing new electricity supply will be important.

I believe we must plan for our needs carefully and come to a consensus on the system we want. We all have to realize that Ontarians will accept the need for a new, major source of electricity supply only if they are convinced that all other cost-effective and environmentally acceptable options have been explored.

We are reviewing our options to determine the relative benefits and costs of each one. Our options for additional supply include:

- o a new major generating station powered by coal, oil, gas, or nuclear power,
- o enhancing the supply from existing generating stations,
- o purchase of electricity from Manitoba or Quebec, and
- o non-utility generation.

In non-utility generation we have encouraged small hydro development, energy from biomass and waste, and cogeneration.

There are 23 private generators supplying power today. Another 78 projects are at the proposal stage. We estimate private generators could supply up to 10 per cent of Ontario's electricity by the end of the century.

The Non-Utility Generation Advisory Council, with representation from Ontario Hydro, industry associations, private companies, and my ministry is helping us resolve non-utility generation issues.

I hope to be able to release the government's policy statement on parallel generation in the coming weeks.

Non-utility generation is of special interest in the North. There are a number of energy from wood projects as well as a significant number of small hydro installations.

Private generation has a number of advantages. it increases the availability of energy, adds flexibility to our system, enhances self-reliance, and creates environmental benefits. And with my ministry's support, it can become an important new indigenous and exportable Ontario industry.

In water power, Ontario Hydro is planning on the power that could come from development on the Little Jackfish and Mattagami Rivers, and from additional development at Niagara Falls. Further development in the Moose River basin is also possible.

We could purchase electricity from Quebec or Manitoba. Ontario Hydro has been negotiating with these provinces. There are some advantages to purchase, provided the price is competitive and the reliability is secure.

Then there is the option of building a major new generating facility. Within that, there are also choices. We have had studies and reports on the costs and safety of various options.

A new nuclear generating station is clearly a possibility. The existing nuclear stations produce about half of our electricity, efficiently and safely.

We will consider oil-fired, gas-fired, and coal-fired generating stations as options.

The challenges and options are evident to those who follow energy matters closely. Now the time has come to hear from the public. Northern Ontario has its own special interests in energy.

Remote northern communities have their specific concerns. They want better service and reasonable costs. The government and Ontario Hydro have been responding to these very valid concerns.

We have now lowered the hydro rates for isolated communities to levels that prevail in the rest of rural Ontario. And Ontario Hydro will be upgrading the facilities to ensure higher service levels.

Native communities also want a stronger say in the development of local resources. They want to be involved in the consultation process, and they are also worried about maintaining their traditional life-styles. The government is committed to addressing those concerns.

In recent years, Northerners have brought forward some other interesting ideas, including suggestions that energy projects should be used as a development tool in the North through more flexible incentive rate programs for electricity.

This is the time to speak up, to express your ideas and outline your goals. We are here in Sudbury to listen to those who work and live in Northern Ontario. Your views are important as we make energy choices.

We must choose carefully and make our trade-offs with as much knowledge and foresight as we can. Our quality of life and that of future generations will depend on how well we balance demand and supply.

Thank you.

-30-

SPEECH BY

JOY NEILL

2ND VICE PRESIDENT

NORTHWESTERN ASSOCIATED CHAMBERS OF COMMERCE

ARMSTRONG, ONTARIO

AT THE ONTARIO'S ENERGY CHOICES CONFERENCE

THE NORTHERN PERSPECTIVE

JUNE 20, 1989

HELD AT THE SHERATON CASWELL HOTEL

SUDBURY, ONTARIO

Good afternoon Ladies, Gentlemen and Mr. Ministers.

I was genuinely pleased to hear the Ministry of Energy decide to sponsor an "Energy Choices Conference" for Northern Ontario in recognition of the needs of our Northern Region.

Energy, merely by our geographic location, is a primary development tool for Northern Ontario. (1) In the building and construction of electrical plants be they hydraulic, thermal or nuclear. (2) In having a reliable supply of power available at comparable rates to enable development to take place in all northern communities.

As a business owner and resident located in the small northern community of Armstrong, 150 miles north of Thunder Bay I am perhaps even more conscious of energy needs for small communities. Until recently, the cost of our hydro was approximately five times greater than other rural customers in Ontario because we are not on the grid system. Our power is supplied by diesel generation and our community, along with 32 others were paying exorbitant costs just to run 20 amp services in our homes. As of April 1st, all customers of Ontario Hydro pay a standardized rate. We are one of few communities in northern Ontario where our cost of energy (electricity) has decreased 40 - 70%.

Although the costs are now standardized, we still have a problem with supply because we are on diesels. It's a chicken-and-egg situation. To have a major development we need substantially more power, but we need the power to attract industry. So, relatively speaking, our community has wrestled with a problem for some years that as Northerners we all face.

Small businesses in Northern Ontario wrestled with other high costs of energy. The recent budget announcements, federal and provincial, put a strain on our tourism industry with higher gasoline and aviation fuel costs. Our main tourist market is the United States. They pay 50 cents a gallon for gasoline travelling to our borders and then pay 50 cents a litre in Northern Ontario. This is a great incentive to visit and tour the North!

Many businesses and areas located in Northern Ontario on major transportation networks are still dependent on self-run diesel generation, i.e. west of Atikokan Hwy 11. For business to expand and communities to develop, they must be linked to major power supplies.

In the early fifties, Ontario Hydro promoted the Rural Electrification Program in Ontario. Today, we need a Northern Ontario Electrification Program, one that will link developing communities and major transportation routes on a grid system.

Unfortunately, today we are unsure if we have enough energy sources to meet the ever-increasing demands, much less encouraging additional demands. However, I think we can have a win-win situation. Northern Ontario's greatest asset is our natural resources and as Northerners we must insist that these resources are utilized to their fullest potential and that means multi-use. We have no resource in Northern Ontario that is so infinite that it can be or should be designated for a single use, be it land, water, trees, fish etc. But to have a multi-use system, we as Northerners - whether native or white, forest industry, tourism, mining, trapping, etc - must agree to the uses of our wealth and just perhaps we will have to make compromises. When we do this, then we can develop our resources in a reasonable and sound environmental manner.

Northern Ontario must now take a leadership role in developing reliable sources of power for our future. We must initiate a major development program to utilize any and all possible hydraulic sites. Private business should be encouraged to participate in this. We must encourage co-generation and manage the utilization of our waste - in other words we must maximize the use of all our resources.

My final recommendation - would be to investigate the possibility of a nuclear generating station located in the north away from the high priced land and mass population. This would include additional tie lines to major markets - including the United States.

We have choices. As I see it, we either act immediately and utilize this problem of energy shortage to our benefit or sit back, continue our in-house bickering over our resources and await our economic demise! That's our choice!

NOTES FOR

REMARKS BY

JACK MASTERS

MAYOR - CITY OF THUNDER BAY

ONTARIO ENERGY CHOICES CONFERENCE

THE NORTHERN PERSPECTIVE

SHARATON CASWELL HOTEL
SUDBURY ONTARIO
JUNE 20, 1989

CITY OF THUNDER BAY

RECENT ENERGY CONSERVATION ACTIVIES

FACTS:

- Approximately 173 City owned properties exclusive of rink shacks, concession trailers, small storage facilities etc.

1988 ENERGY COSTS

Gas	$1,094,882
Electrical	$2,259,851

PUBLIC WORKS:

- A 1988 Infra Red roof inspection 263,000 square feet of City buildings roofs identified 8,400 square feet (3% of the total) of roof and insulation damage. A tender for a replacement and repair program is being prepared.

- A 1988 examination of the exterior precast concrete panels at City Hall revealed irregular patches of caulking between the panels and cracks at the roof coping and flashing joints. The caulking will be raked out and replaced, and the roof coping and flashing joints will be repaired.

TELECOMMUNICATIONS DEPARTMENT

- The Vickers Street Exchange recently had the built up roof replaced along with the installation of energy efficient low E windows and sequential boilers. An ongoing maintenance program at the other exchanges saw new insulated doors and caulking installed.

- A new Telecommunications administration building is in the planning stages and provides an opportunity for the department to examine the latest in energy efficient design and equipment

.HOMES FOR THE AGED

- Recently electrical consumption monitoring equipment has been installed at the 3 Homes to determine peak load times. Once peak load times are established, equipment operation can be scheduled to operate more cost effectively. In addition a complete lighting audit will be done resulting in delamping and downsizing of tubes and bulbs to reduce consumption. Recently Dawson Court replaced 2 large boilers with 14 small sequential boilers which provide adequate heat and steam as demand dictates

FIRE DEPARTMENT

- The Neebling and Hodder Stations have had energy efficient window and overhead door replacements. All other stations undergo annual weather stripping and caulking maintenance programs. The fire fleet is to be converted to diesel within a 2 year time frame. The Vickers St. Station has had the roof replaced with additional insulation added.

PARKS AND RECREATION

- Three arenas have recently been retrofitted from incandescent to energy efficient metal halide lighting systems. The refrigeration systems in the arenas now recycle cooling water for the compressors resulting in less consumption.

- Additional insulation has been installed on the foundation of the Conservatory along with insulated overhead and entrance doors. Where possible, Community Centres have been converted from oil to gas.

GENERAL

- We are in the process of registering in the Ministry of Energy's Municipal Building Energy Efficiency Program (MBEEP) where, if the criteria are met, we can conduct subsidized building energy audits in our major buildings. This will be an updating process for us on audits conducted in 1982 and 1983 and could touch on heating, ventilation and air conditioner alterations, lighting reductions, insulation analysis and the like.

- In a memorandum from Hartmut Rosenfeld, Canada Games Complex to Alan Fydirchuch, Public Works outlined are some energy conservation measures as follows

1) Area heat control within building. 5 different heating units to allow exercise areas such as Weight Room, Squash Courts and Multipurpose room to be kept at lower temperature.

2) Rewiring of flourescent lamps so only one lamp out of two per fixture is operating.

3) Use of Pool Blanket on heated swirpool. Covered every night.

NOTES FOR REMARKS BY

CHARLES FOX

DEPUTY GRAND CHIEF, NISHNAWBE-ASKI NATION

ONTARIO ENERGY CHOICES CONFERENCE

THE NORTHERN PERSPECTIVE

SHERATON CASWELL HOTEL

SUDBURY, ONTARIO

JUNE 20, 1989

CHECK AGAINST DELIVERY

Mr. Chairman, Fellow Speakers, Delegates, Ladies and Gentlemen - I appreciate the opportunity to address your forum today.

The theme of this conference is energy choices and the Northern perspective. It is clear from the conference literature that the choices relate to the so called demand/supply options currently under consideration in Ontario.

I note that I have been asked to participate in a session with other Northerners such as municipal, labour and industrial leaders. I believe you will find that our perspective differs considerably from that of other Northern participants. In part, those differences are due to environmental considerations.

I should add a few comments on the Nishnawbe-Aski Nations which should serve to highlight the distinctions we have with other Northerners. While we hold and share much in common it is the distinctions that I must highlight today.

The Nishnawbe-Aski means the people and the land. The significance of our nations name will become apparent when we talk about the supply side and environmental considerations of energy. Our nation is comprised of 45 communities and approximately 30,000 cree and ojibway people. We are the people

of treaty number 9 and that portion of treaty 5 that lies East of the Manitoba border, and from the height of land North to Hudson and James Bay. Our territory represents approximately 60 per cent of the land mass of Ontario.

Prior to 1980 most of our communities had no electrical services while the rest of Ontario had energy dripping out of its' sockets. I believe you can imagine the strains this placed on community life. How difficult it was to provide services such as education, health care, communications, economic development, the ability of children to study at home in the evening.

The vast majority of our communities are only accessible by air transportation. Some of our communities do not have airstrips to this date. It was not until around 1980 that we started to obtain electricity services in many of our communities. In part, this was due to the lack of airstrips. Airstrips had to be built to meet Ontario Hydro standards. Some airstrips have yet to be built and those airstrips are an on-going point of discussion between our nation and Ontario.

An arrangement was struck between Canada and Ontario hydro to provide electricity services to our communities. There is much to be said about that arrangement without our consent and in many instances understanding. It was decided to provide our communities, over a period of time with diesel systems. Some communities still await electrification We were not consulted as to options or planning.

During the 1980's, with the installation of many diesel systems, improvements were made - to that there can be no denial. However, there were many short-comings and inequalities to these improvements. The electricity rates charged to our citizens and Canada for commercial, residential and Government facilities were the highest in the land. Under the Power Corporation Act we were charged for power at the cost of producing that power. Not in terms of the total system, but in terms of our own isolated situation. Hydro just set the rate and that was it - there was never any real discussion as to those rates nor a tabling of the information on Hydros' costs to produce the energy.

Prior to last year, Hydro set the cost of producing energy at around 44 cents per kilowatt hour. Government and residential consumers paid that rate. The commercial rate was subsidized at around 33 cents per kilowatt hour or at a one third rate reduction. No one else in Ontario paid these exorbitant rates - yet we, the poorest peoples of the nation by any statistical survey - were forced to pay those inflationary rates.

Rates were not the only problem. The level of service was another set-back for the social and economic benefits of our people. The diesel systems that were installed were restricted diesel systems and we could only have a 20 AMP service in our facilities. Imagine your homes with a 20 AMP service and all the necessities and conveniences you would have to delete from your daily life. Imagine your businesses and Government offices with a 20 AMP restriction.

Last March Ontario Hydro, in conjunction with Northern Development and Mines, announced a new rate and service structure. It is noted that this announcement immediately followed the proposed amendments to the Power Corporation Act. This rate structure was to put us on an equal footing with the rural retail rate system. This new rate system brought a reduction in our residential and commercial rates - they would

remain higher than those charged to many regular grid customers. Commercial rates remain high enough to discourage economic and business developments - especially, for any export based initiatives given the already high costs of air transportation. Energy is a vital component of the economic development equation and more creative policy initiatives must be examined.

The Government rate change is another story. This rate was not to be charged at the cost of producing power any longer, nor would it be reduced to the a lower rate as were others under the principles of the amendments to the Power Corporation Act. A premium rate is now charged for Government facilities to off-set the reduced and still high rates for commercial and residential facilities The Government rate has jumped from about 45 cents per kilowatt hour to about 62.5 cents per kilowatt hour. Canada and our nation have objected to this exorbitant rate increase. There is no set time-frame for the increase nor any indication as to what percentage increase, relative to other rates, will be charged in future years.

Let us take a closer look at the implications of the Government rate. Hydro has stated that the Government rate will apply to all customers receiving direct or indirect revenues from the Governments. This could apply to most facilities in our communities.. More importantly, as we move towards self-Government and take over institutions such as schools, senior citizen homes, health facilities etc. - we are now to be charged this discriminatory and highly inflationary rate for electricity. Our budgets to deliver most of these services have not increased which means we will have to cut back on our services or in some instances not provide them at all. An increase of this magnitude simply means that significant and painful cutbacks must occur.

The new rate structure, effective in April of this year, offered theoretical service level improvements. The 20 AMP service restriction was removed. I say theoretical because in practice it has not happened. The diesel systems in our communities are restricted diesel systems. If communities were to take full advantage of the new rates the restricted diesel systems would have to be expanded to handle those increased demands. Sounds simple - just expand the diesel systems. There is a catch. Ontario says that Canada will have to pay for the expansion and up-grading of existing systems to Hydro standards and that such

will happen over a five year period. We have asked for a schedule as to how and when these systems will be expanded to accommodate new demands resulting from the removal of the 20 AMP restriction. Ontario has yet to respond. Canada says it never agreed to pay unlimited capital costs for expanded diesel systems. Therefore, Ladies and Gentlemen - we have simply achieved a theoretical improvement with no visible, practical application.

We have made efforts to examine the supply side of energy to our communities and to examine alternatives to environmentally unsound, expensive and wasteful diesel generation. Over the past few years with funding from Ontario we undertook a study in the James Bay coastal area to examine the feasibility of providing energy to our communities by extending the grid up the coast.

We formed a working committee with federal, provincial and Ontario Hydro representatives. Independent and mutually acceptable consultants were contracted by the committee. The consultants examined all options available and concluded that the only sources of energy that were technologically proven, viable and environmentally sound were diesel and a grid extension. The end result was that the grid extension was far

more viable than diesel generation over the longer term; it was noted that there would be considerable savings to both Canada and Ontario over a period of time. It was also noted that the capital costs of the grid extension would be high at the front end while diesel maintenance costs would be higher over the long term. At the moment we are left with diesel systems that everyone knows are far more costly, wasteful of energy, and currently provide a lower level of service compared to the grid. At the same time - Ontario preaches energy conservation, environmental, and economic development considerations. Whatever happened to the options when it could benefit us as consumers? Of course one must keep in mind that diesel systems are powered by oil imported from out of province. Our people and Canada pay all the costs and there is no drain on the quickly depleting sources of energy in the Ontario Grid System.

The above should give you a picture of what it has been like in our nation. Energy has proven to be one of the most frustrating things we have had to deal with and all concerns seem to fall on deaf ears. Every time we have tried to influence the system we are reduced to consultation mechanisms, and then other levels of Government and Hydro seem to do as they please. Consultation has not been an effective vehicle for us, and just like the term public participation has been one of the most abused terms by Governments of modern times.

Let us now turn our attention to the current supply/resources side of your equation.

Over the past few years Ontario has continued to consume more and more energy. The growth of energy consumption exceeds that of economic growth. Ontario has made efforts to make more effective use of its energy but it has not been able to conserve consumption. In our nation, you have limited our consumption by placing a premium rate and practical service restriction on that energy. You have not done that in the rest of Ontario. This selective policy can and will no longer be tolerated.

Ontario is now facing energy shortages - if things continue along their present course. Shortages have been predicted in both the Western and Eastern Grid Systems of Ontario Hydro. There is a deep political concern about the decision that will be made this fall as to whether to build another nuclear generating station or not. It must be noted that other jurisdictions in the international community have been closing down or ceasing to build such plants. There has been no solution found in terms of nuclear waste disposal nor have those costs been determined and factored into the total cost of this source of energy.

Even if a decision is made this fall to build another nuclear plant by the time it goes through an environmental assessment a shovel will not dig into the ground until approximately 1993. With about a 10 year construction term - a new plant will not come into production until after the turn of the century. At the same time the Chairman of Ontario Hydro is predicting shortages by 1994. Faculty at the University of Toronto have predicted the same shortages by the mid 1990's. Hydro responded that growth in demand will drop from 4.5% to 2.5% to avoid a shortage. This we shall have to see. In a statement to the financial post on June 7, 1989 the Chairman of Ontario Hydro stated that if growth continues at just 2.7% that Hydro generation capacity will be operating at full capacity by 1994.

In terms of the Northwestern portion of Ontario, shortages have been predicted by 1992-94. About a year ago Ontario Hydro had proposed an interconnection study to build a higher capacity line from the Harmon Generation Station to Marathon and Thunder Bay so it can move more energy from the Eastern to the Western Grid Systems. This development was recently put on hold and Hydro stated it would temporarily avoid shortages in the Northwest through energy conservation and co-generation initiatives. This line would cut through the traditional lands of our Waabun Tribal Council communities and have enormous impacts.

Over the past few years there has been considerable debate over the Little Jackfish development. It is interesting to note the environmental assessment document for that project - a project that is not even off the ground yet. The environmental assessment of that project states that this project will eliminate the need to pursue other options such as hydraulic developments in the remote North at the largest hydroelectric potential lies in the four Northerly Flowing Rivers - the Severn, Winisk, Attawapiskat and Albany Rivers. The report also notes that the lands around these rivers is flat and large areas would have to be flooded to provide adequate head and storage. There is also note of the long distances and costly transmission line costs. In conclusion, the assessment notes that "These alternatives are not considered viable at this time."

The Little Jackfish environmental assessment raises a number of questions. The project is not underway and Northern Hydroelectric Alternatives have been eliminated for the time in that report to substantiate and environmentally justify the Little Jackfish Development. At the same time we are confronted with proposals to develop the River Systems in the Northwest and in Moose River drainage basin region. The Moose River drainage

region proposal notes that the same process could be used to develop the Severn, Winisk, Attawapiskat and Albany River Systems. There would appear to be some contradiction in the rationale and justification for these different developments.

It is about time that Ontario Hydro and the Ministry of Energy put their cards on the table so the people of the Province can examine the options in real terms.

Ladies and Gentlemen, we are not talking about options that have been proposed by Ontario. We are talking about the development of all sources of energy. We are talking about resource management and time frames. When all sources will be developed - there are no choices in the final. The Chairman of Ontario Hydro is on the record for stating that all economically viable hydroelectric potentials would be aggressively pursued over the next year.

The Chairman of Hydro further indicated that in order to sustain energy growth at the lower rate of 2.7% Hydro would have to build another generation station. He expressed a concern that the lengthy planning, approvals and construction times would preclude the operations of a new station before the turn of the century. Once again, what really are the options before us?

Last September, Ontario Hydro proposed a 5 billion dollar development to Ontario for a series of dam expansions and new dams in the Moose River drainage basin region - our territory. Ontario Ministries have been examining this proposal since last fall. How did this proposal come to our attention - purely by accident. It amazes us that someone would even contemplate such a development let alone propose it - without even discussing the matter with our people. It is a small wonder that conflicts occur over Northern development initiatives.

Over the past couple of years it appeared that Ontario had adjusted its approach to resource development in our territory. Many of you are aware of the Dona Lake development near Sioux lookout, Ontario. In that development Federal, Provincial, the company and our people sat down and negotiated an agreement on acceptable terms and conditions. Last week, the Premier noted "We see it as a model for future development in Northern Ontario". The Premier is reported to have clearly indicated that native rights and claims, environmental concerns and resource uses had all been addressed before the digging had started. He stated "We have answered the legitimate claims for how best to develop the site so that all interests can be satisfied."

In accepting that energy is a resource - should it not be subjected to the same model or even a better model having learned from the experience of the Dona Lake agreement.

Approximately two years ago, we negotiated a Memorandum of Understanding with Canada and Ontario. This agreement has a focus on negotiations towards self Government, specified in that agreement is Hydro and we are moving towards negotiations, under the agreement, on lands and resources. We expect Ontario to honour its signature to that agreement. To proceed otherwise in terms of energy resource development would completely undermine the spirit and intent of the agreement.

Recently, we communicated a number of concerns with the Ministry of Energy and particularly the need for a defined process and financial resources for discussions. The Ministry responded that in terms of rates and services they would monitor the consultation process of Ontario Hydro. This is not acceptable, and one can see why there is a need for an examination of roles of the Ontario Energy Review Board, and the Ministry of Energy. In terms of rights and jurisdictional issues the Ministry referred us to the Memorandum of Understanding.

In concluding I would like to summarize the following:

1. the rate and service conditions in our communities must be addressed. Selective, discriminatory, and inflationary policies must be removed.

2. There is a clear need for a process and resources to be put into place to address energy issues in our territory.

   Simple consultation is no longer acceptable nor satisfactory as it pertains to resource development in our territory.

3. There are no real options in terms of the supply of energy - all sources are proposed for development over time.

4. The Premier of Ontario has indicated how developments must occur in the North - issues must be resolved with native peoples before projects commence.

5. Ontario must honour its signature on the Memorandum of Understanding.

Ladies and Gentlemen, one week ago our chiefs deliberated on the dams issue. Let me tell you that they have clearly said that no such developments will proceed until and unless all of their concerns and interests are addressed to their satisfaction and they must be in agreement with any development before it can proceed. They have clearly stated that the land, environmental protection and sustainable development are paramount.

Over the past few years we have worked hard with Ontario to develop a better system for the remote North and to improve our relations. How we handle the energy issue will be a true test of our relationships. The people of the Nishnawbe-Aski nation are willing to discuss these matters - today I throw the challenge to Ontario to demonstrate the same political will.

Meegwetch

Speech by

Homer Seguin

Area Co-ordinator Northeastern Ontario
of the United Steelworkers of America

at the Ontario Energy Choices Conference

The Northern Perspective

June 20, 1989

Sheraton Caswell Hotel

Sudbury, Ontario.

Mr Chairman, Honourable Ministers, ladies and gentlemen. Many of you know my reputation and our union's of fighting about radiation safety. Many have accused our union and yours truly of being anti-nuke. Following this presentation this afternoon I ask that you judge for yourselves.

We in the trade union movement are interested, as are most people, in the overall quality of life we face on a day-to-day basis. To this end, we believe, we require good paying jobs, decent pensions and benefits. But, we must also have safe and healthy work places; a healthy and clean environment; and, reliable, reasonably priced energy. These are necessary requirements in obtaining the ideal quality of life. And we believe energy that is produced, or partly produced, in the North improves our quality of life by providing much needed jobs.

Because of our northern climate we utilize considerable energy for heating and because of our northern distances, we require considerable energy for travel and for the transportation of goods and supplies. Historically we Northerners pay more for all forms of energy. And this strangles our industries' competitive ability and adversely affects our quality of life.

It's unfair and must end. Many of our northern communities are one industry ones and this must change. In order for northern industries to grow, they must have access to adequate, reliable, reasonably priced energy.

In March of this year our union presented a brief on Energy to the Canadian Labour Congress' Nuclear Policy Task Force particularly as it pertains to nuclear energy and its use in producing electrical energy. But, we also made other recommendations and comparisons in this brief.

Since this brief establishes official United Steelworkers of America policy, I believe it is worthwhile to refer to a few of its sections and to adlib some additional explanations. In order to prepare this brief, it was necessary for us to evaluate the various other fuels capable of being utilized to produce electrical energy as alternates to nuclear energy. This caused us to research fuels such as coal, oil, gas, hydro electric generating capacities and other possibilities.

I'd like to turn now to certain sections of the brief commencing with the section title 'Overview of Nuclear, Coal and Oil Energy Sources'. This section is dedicated to the Honourable Robert Wong, Minister of Energy, since in his luncheon meeting he referred to these as possible options up for decision and we ask him to pay attention.

In hindsight, there is little doubt that government and employer negligence within the nuclear industry has caused numerous deaths, a large number of which could have been avoided. The environment has likewise been needlessly devastated. There is also little doubt that the front end of the nuclear industry, the mining, milling and refining of uranium, has probably been the most neglected, particularly in the early years of first development in Canada.

This situation has changed considerably in Ontario, but only after years of effort by our union and supporters. For example, in Ontario over 170 lung cancer, radiation-induced cases from the mining-milling sector have been acknowledged and accepted by the Ontario Workmen's Compensation and over 230 other cancer victim cases are in the process. As far as the environment is concerned, 55 miles of streams and connecting lakes have been devastated downstream from the Elliot Lake uranium mining operations.

In hindsight, it is sometimes argued that the nuclear industry should not have been allowed to live. This may or may not be true. However, there is a substantial view that nuclear electric generating plants are safer, environmentally cleaner and more economic than oil or coal generating plants and less subject to economic foreign blackmail, as witnessed in the oil cartel action of recent years.

We also have considerable concerns about the proven safety, health and environmental hazards associated with coal production and particularly the mining of it. Additionally, we are repeatedly reminded of the thousands of deaths caused by accidents and diseases in the coal, oil and gas industries. This concern is highlighted when we analyze the full scope of these industries.

In addition to the known hazards associated with the production of coal, oil and gas, there are considerable other hazards associated with the transportation and use of this form of energy. I believe it is safe to say that these industries kill, or maim, literally thousands of workers each year. These industries are also major polluters of our environment.

Oil and oil product spills are far too frequent and have caused considerable destruction to our waters, shore lines, aquatic and other wild life. A prime example of this is the recent spill in the Arctic. I believe the ship was called the Valdiz and it has destroyed literally billions of dollars worth of tourism, wild life and aquatic life.

Atmospheric conditions resulting from the use of these products are causing acid rain which is destroying or damaging lakes, streams, forests and property, as well as threatening our health. Additionally, these emissions are thought to be as destructive as greenhouse gases. If so, they add a new dimension of threat to our health and the environment on a world wide basis.

Union Policy

Although we are advocating alternative renewable energy development such as wind, water, solar and tide, we know the nuclear industry is with us at least for the forseeable future. Additionally, the union is on record as strong proponents of energy conservation as an important means of restricting and/or delaying the number of future generating plants required, whether they be nuclear, oil, gas or coal driven.

Many years ago, when we concluded the nuclear industry would be around for sometime, we adopted a firm policy to change it for the better. We recognized we had a responsibility to our members and the public to improve all conditions and to save lives. We knew that to adopt the policy (as other groups have done) that advocates a simplistic "close the industry down" philosophy would not work.

In fact, it would hinder our union's major policy of properly protecting and representing our members and the public. For example, how can any one meaningfully insist on large resources being spent to clean up the industry, while at the same time, advocating its destruction? Who would listen? The "close the industry down" philosophy contradicts and hinders the "clean it up" philosophy and, in our opinion, is not realistic in face of the existing nuclear energy status and political will.

Additionally, we are decades away, at best, from the development and deployment of meaningful, demonstrated better alternatives. For previously stated reasons, we do not believe coal or oil are the best alternatives for Ontario.

Briefly stated, our union, over the years, has insisted on a workplace and environmental clean up as well as maximum protection, plus research to develop conservation and renewable energy as long term alternatives.

Conservation

The world's energy reserves are not unlimited and the exploitation of most of them has proven to be costly and harmful to our health and the environment. This is true of nuclear energy as well as fossil fuel energy sources. Therefore, we must reduce our present and future requirements by introducing a major conservation program.

This program must have government leadership and should:

(a) promote cooperation by educating the public in all aspects of the need for conservation; (b) provide tax incentives for cooperation and compliance; (c) encourage and lead R&D programs to develop energy efficient appliances, fixtures, systems and practices (d) develop a peak load distribution strategy which levels demand and thereby eliminates expensive peak load facilities; (e) introduce practices and policies which eliminate energy waste and encourage a similar public response; (f) upgrade and modernize existing hydro electric facilities in order to increase output.

Alternatives

Renewable energy sources are the best in terms of long term availability and, if developed properly, in terms of worker and environmental protection. We, therefore, recommend:

(a) That untapped hydro electric capacity has great potential for development. This includes the small and medium potential of Ontario. In making this recommendation, we emphasize the need for environmental impact studies in order to guard against environmentally unsound hydro electric projects.

(b) Other renewable energy sources such as solar, wind and tide should be encouraged. To this end, an aggressive research and development program should be undertaken. The objective is to develop, at least on a regional basis, economic alternatives. We emphasize that R&D and subsequent production must be established in northern communities which will be adversely affected by the widespread use of such alternatives. This would cushion or offset community harm and job losses.

(c) Cogeneration of energy in production processes should be encouraged and further developed within the R&D program e.g. process waste heat including mine exhaust air, etc. has tremendous potential as an almost free energy source. In some cases, natural heat sources may also have potential and should be explored.

(d) Innovative energy sources should be researched and developed. This includes potential such as the use of methane gas generated by decomposing sewage and garbage. The controlled burning of municipal garbage is also a promising cogenerating possibility, particularly since better garbage disposal methods are presently a priority issue in many cities.

Nuclear Industry Recommendations

Until alternate energy sources are adequately developed and in place, there will be a heavy demand to utilize nuclear sources for electric power. Indeed, even if these alternate sources are developed, it will probably be many decades before we could reasonably expect a lessening of the current nuclear energy demand. It is a fact of life that Canada already has a large nuclear industry and in Ontario, it supplies about 50 per cent of this province's electricity. Realistically, this means the industry and its inherent problems will be with us for an undetermined, but substantial period of time, unless mass public opinion forces an alternate direction. In our view, this latter concern is possible if either or all of the following occur:

1. If a major nuclear disaster similar to Chernobyl happens in Canada or the United States and directly and seriously impacts on Canada and/or

2. If the AECB, industry and/or government continues to refuse to adequately respond to unions and others who are determined to clean the entire industry up, and/or

3. If corrective measures are not taken to eliminate health and environmental damage caused by the industry operations and wastes.

At this point I will conclude referring to the Nuclear Brief and make the following general statements and observations.

As Ontario ponders a decision about future nuclear energy requirements in Ontario, we must emphasize the following:

> In order to operate nuclear driven electrical plants we need uranium fuel. The mines in Elliot Lake are probably now the safest uranium mines in the world and Ontario must purchase at home for this reason and for the community's sake and for its jobs. Elliot Lake should not be threatened. If Ontario is to have a nuclear industry, surely it must buy in Ontario and look after Ontarians.

In conclusion, I leave you with these thoughts and a serious proposal on nuclear energy. If nuclear energy is to be a major source for Ontario, we must ensure that there is no repeat of the previous Elliot Lake or Bancroft uranium mining health and environmental disasters. We now have the tools and knowledge to do so and we must use them.

The Government should play an important part in this guarantee of protecting the health of our workers and our environment.

Additionally, we must tell Hydro they must buy their fuel in Ontario from the Elliot Lake operations. As I stated earlier, these operations are now the safest in the world and because the grades are low, this helps make them more safe. We cannot be hypocrites and say we are pro-nuclear and we will have a nuclear industry, but because the price is a little better we are going to buy our fuel elsewhere. If we are going to have the problems associated with the nuclear industry and the waste, we must also have the good. And the good means jobs. Jobs both in the back end of the cycle, but also in the front end of the cycle too.

And we must oppose the North being used as a low-level nuclear waste dump. We should tell everyone that we will keep and treat our waste, but others should do likewise. If Ontario were to do all of these things and do them right, I believe we could and should build a nuclear power plant in Northern Ontario providing northern jobs and cheap electricity for the north's industries. And, ladies and gentlemen I propose that this plant be built on the North Shore. There has already been a site selected and millions of dollars probably have been spent on its feasibility study.

Although we propose that this should be done, we do so only conditional upon all of the things I have said. We should first try to do the conservation. We should develop R&D and do things better. But if we do need to use a fossil fuel, we cannot do so by using the historical fossil fuels of coal, oil or gas.

Thank you.

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WATER AND PEOPLE; HYDRO REDISCOVERS ITS ROOTS

NOTES FOR REMARKS BY

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SHERATON CASWELL HOTEL
SUDBURY, ONTARIO
JUNE 20, 1989

I am particularly pleased to be here today. This city -- Sudbury -- and this conference are both ideal locations in which to discuss some of Ontario Hydro's future plans in Northern Ontario.

Ontario Hydro owes its birth and continued existence to a delicately balanced mixture of politics and practicality. The political part occurs every time a select group of people get together to plan for the future. Too often that means Toronto.

The practical part is where the plans and proposals actually are turned into action. When things get done and industries get built and economies thrive. That usually takes place outside Toronto.

As a former manager of Sudbury Hydro, a former director of Hydro's Northwestern Region, and now as director of Hydro's retail customer division, I am quite aware that the distance between Ontario Hydro's Toronto base and its activities in the field is often more than simply geographic.

My experience is a constant reminder that we must continually work hard at bridging that gap.

While Sir Adam Beck was fighting political battles in Toronto, Hydro was out developing the river systems of the province. Names like the Abitibi, the Nipigon, the Mattagami and the Madawaska became synonymous not only with hydraulic development, but economic development throughout the province. Even the private development locally of the Wanapital River system was intricately tied to the economic growth of the Sudbury mining industry.

In the first half of the century, two things concerned Hydro. Water and people, and not necessarily in that order. As we rapidly approach the end of the century, I can state here today that we are going back to these roots.

It's no secret that we were so busy building new sources of generation to keep up with the demand after the Second World War that we tended to lose sight of customer service. Let's face it: we were scrambling to meet customer demand, and we did it well. We kept turning on more and more lights and helped to make industry in Ontario competitive. And that, by and large, was exactly what was expected of us. That's what our customers wanted.

And even though we had to develop new technologies in the form of coal and nuclear-powered generating stations, it was water power that enabled us to keep the rates at a level that is the envy of our neighbors across the border, and around the world.

Water power, though, seemed to drop by the wayside in the 1970s and eighties. Even within Hydro, the hydraulic group started to feel like an old-timers hockey team. They still enjoy the game, but realize that isn't where the real action is.

What happened in the 1970s? What precipitated the changes we are trying to deal with today? The oil crisis was important, of course. But it took far more than that to throw our modus operandi right out the window. While the energy scene was changing rapidly, and leading to new, and lower, energy consumption patterns on the part of our customers, something even more important was taking place.

Society's values were changing and changing dramatically. And a technically-oriented company like Ontario Hydro found it very difficult to adjust. All the beliefs and accepted conventions of 70 years seemed suddenly to be found wanting. At first, naturally, there was denial that this was even happening. But the belief that the good old days would return was short-lived.

The changes that were taking place were real. Our customers really were interested in the environment, and therefore concerned about the way we were operating and the impact we were having on them personally. Acid rain wasn't some distant problem. It was affecting the lakes they played on. It was affecting their total environment, even their health. Add to this the "greenhouse effect" which, in two short years, had people worrying about the relationship between skin cancer and products containing chlorofluorocarbons, about floods and about droughts. Even about lakeshore cottages.

Our customers are no longer content simply with an assured supply of electricity. They are more knowledgeable and more sophisticated in their approach to energy use. They want to know more. They want us to help them be more aware of their options, of the ways they can be efficient and responsible consumers.

Above all, they are more interested in how we were producing this product. A product.they can't see, smell or feel in their homes. Or at least we hope they can't. But they also see, feel sense the effect our generating stations are having on their lives as citizens.

As Hydro changes direction to cope with these new developments in the '80s, another major problem appears on the horizon. The surplus of power Ontarians enjoyed in these years was tenuous. In fact, as the economy starts to pick up in 1984-85 following a terrible and deep recession, the welcome improvements brings some serious problems in their wake. Shortages start to become possible again. Perhaps as much as 10 years away, but even 10 years cuts it too fine in an age when it takes at least that long to develop a major generating station.

So, in 1984, Hydro launches the biggest planning study in its history. It is called the Demand/Supply Planning Strategy Study, and its intent, simply, is to come up with a strategy for meeting tomorrow's energy needs. It turned out to be some exercise!

Five years later, we have that strategy, but we still haven't planned a single new facility. So what have we been doing?

Well, as the ads say, we're listening. We've done a lot of listening in the past five years as we tried to analyse, understand and develop priorities that reflected the changing needs of Ontarians. To do this we would have to become a more service-oriented corporation and place less emphasis on our production process

If that sounds revolutionary, then I agree. If that sounds like a PR job, then I disagree. I've always been in a position to get a good feel for where our customers are coming from. And I feel strongly that we are in tune with today's Ontario, as we plan together, for tomorrow.

Let's look at the evidence. First, we have placed a top priority on maintaining and increasing the capacity of our existing plants. That means we will be refurbishing, expanding and upgrading our old hydraulic stations, particularly here in Northern Ontario. This will increase the reliability of their production, increase their output, and ensure they will continue to provide us indefinitely with a safe, economical and renewable supply of energy.

Among the 33 stations on the list for upgrading are our Stinson, Coniston and McVittie plants on the Wanapitei. The others are scattered throughout the province. But this is nothing really new for Hydro. Over at Mattawa, for example, we've just completed a major overhaul of all eight generating units. Sounds simple, but at the rate of one a year, you can appreciate that these are not simple overhauls. They involve a lot of time, people, equipment and a substantial budget, which has local economic spinoffs.

As a result of this work, we managed to increase that station's output by 28 megawatts. That's enough power to look after Kapuskasing.

We are also committed to developing the remaining hydraulic resources of Ontario. In fact, major steps have already been taken for further development of Niagara Falls, and a new station on the Little Jackfish River in Northwestern Ontario.

But the most exciting segment of the renewed hydraulic story will likely take place right here in Northeastern Ontario, on the Moose River Basin. For several years we have been looking at expansion of our stations on the Mattagami River - at Harmon, Kipling and Little Long.

But we currently have a proposal on the table that goes far beyond the Mattagami tributary to the rest of the Moose basin. I emphasize that this is still a preliminary proposal, but it calls for a long-range development plan, extending over 30 years, with annual expenditures in the $200 million range. That's equivalent to eight Science North projects.

Total estimated cost over the 30 years is just under $5 billion. That's a lot of money. Imagine the ripple effects of $5 billion in an economy. That's enough to build 10 Skydomes!

One of the features I really like about this proposal is the staged development that helps to avoid the boom and bust construction stages of earlier northern projects. An orchestrated development such as this should have a far more stable and long-lasting financial impact on those northern communities who would be providing support services.

Phasing the project also means that local people will be able to contribute far more to the project, minimizing the need to rely on outside contractors.

Of course, a development of this magnitude will have to be given the closest scrutiny for its impact on the environment, and particularly its impact on the Native community.

The environment is another key component of our strategy for future development. And that, again, reflects the wishes. attitudes and priorities of our customers.

We are also looking to private development to supplement our own supply needs. Other speakers here today are addressing the cogeneration and parallel generation developments taking place. Our Demand/Supply Strategy places significant emphasis on these developments. This is a major new direction for Ontario Hydro, and it is not just idle talk for me to say we are supporting these efforts.

Our Non Utility Generation division was set up last year to do precisely this. Our regional staff are busy here in Northeastern region with 6 projects in various stages of development and 28 potential projects still in the proposal stage. Four projects, including the wood-waste plant at Chapleau are already up and running. The total output from all these projects could add up to more than 400 megawatts. Four hundred megawatts could look after not only the city of Sudbury, but also the City of Thunder Bay.

Once built, of course, we have to move that power. That's a big part of the reason why we're discussing plans for a major expansion of transmission lines in the corridor from North Bay to Kapuskasing.

Our current transmission system can't handle the potential new supplies that we would be purchasing from the private generators. New transmission capacity, which would cost almost half a billion dollars to build, would also bolster our network in support of the Mattagami and Moose River projects.

So water power is making a comeback. It won't solve all our supply needs in the decades ahead, not by a long shot. We will still need other major supply sources, whether coal, oil, natural gas, nuclear or whatever. But we will support any economic hydraulic project we can find.

Another new direction for Hydro is our plans for customer service. The people end of the business. And it implies far more than simply being polite when a customer calls.

It extends to helping our customers, particularly the industrial and commercial customers, to improve the way they use our product. We are doing that by sitting down with our customers and helping them tackle their existing energy problems or determining new applications that can result in better production times, better products and even cleaner operating processes.

We've been working with Inco and other major industries right here in Sudbury and elsewhere across the North. We think we have a lot to offer all our customers, particularly here in the north where energy is such a critical factor in the success of any enterprise.

The North needs, and will get, new power lines and generating stations. But I believe the nurturing and encouragement of efficiency and conservation in the North will eventually exceed the benefits that will accrue from new capacity. That's the goal we have set for ourselves, or, more accurately, the goal that our customers have set for us.

NOTES FOR
REMARKS BY

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CONFERENCE: "ONTARIO'S ENERGY CHOICES
THE NORTHERN PERSPECTIVE"
SUDBURY, JUNE 20, 1989

SESSION: "ENERGY CHOICES -
NEW DIRECTIONS IN THE NORTH"

THEME: ENERGY AS A DEVELOPMENT TOOL,
ITS ECONOMIC AND SOCIAL
INPLICATIONS.

SUBJECT: COGENERATION

BOISE CASCADE PROJECT - COGENERATION

INTRODUCTION

IN ONTARIO HYDRO'S RECENT ANNUAL REPORT, THEY STATE THAT FOR 1988 AND BEYOND, THEY RELY ON 3 KINDS OF POWER GENERATION; HYDRAULIC GENERATION FROM RIVERS; THERMAL GENERATION FUELLED BY COAL AND OIL; AND NUCLEAR GENERATION USING NATURAL URANIUM AS THE FUEL. THERE IS NO MENTION OF COGENERATION OR NATURAL GAS. IN FUTURE REPORTS, WE HOPE TO FIND THIS STATEMENT REVISED TO INCLUDE COGENERATION.

I WOULD LIKE TO NOTE THAT WE DO APPRECIATE THE SUPPORT THAT ICG HAS RECEIVED FROM ONTARIO HYDRO, IN PARTICULAR WITH RESPECT TO THE FORT FRANCES COGENERATION PROJECT BEING INSTALLED IN THE BOISE CASCADE PULP AND PAPER MILL.

IN 1988, ONTARIO HYDRO FORMED A NEW DIVISION FOR NON-UTILITY GENERATION, WHICH HAS PROVEN TO BE AN ESSENTIAL ELEMENT IN THE DEVELOPMENT OF INDEPENDENT POWER GENERATION IN THE PROVINCE. THIS INITIATIVE HAS BEEN VERY HELPFUL.

THERE ARE TWO AREAS, HOWEVER, I WOULD LIKE TO DISCUSS THIS AFTERNOON, WHICH ARE VITAL TO THE FUTURE DEVELOPMENT OF COGENERATION IN THE PROVINCE. THE FIRST DEALS WITH THE MINIMAL ENVIRONMENTAL EFFECTS OF COGENERATION FUELLED BY NATURAL GAS WHICH, BASED ON THE COMMENTS TODAY IS, I BELIEVE, RECOGNIZED, AND THE SECOND DEALS WITH THE INSUFFICIENT RATES ONTARIO HYDRO IS WILLING TO PAY FOR POWER GENERATED FROM COGENERATION.

ONTARIO HYDRO, IN THEIR RECENT ANNUAL REPORT, DISCUSS THEIR NEW ENVIRONMENTAL DIVISION. THEY STATE, AND I QUOTE, "OUR EMPHASIS IN THE FOSSIL FUEL PLANTS IS ON ACID GAS EMISSION REDUCTIONS. WE HAVE THREE STRATEGIES - FIRST, TO REDUCE THE USE OF COAL BY MAXIMIZING HYDRAULIC AND NUCLEAR GENERATION" (I NOTE THERE IS NO MENTION OF USING COGENERATION) "SECOND, WHEN WE HAVE TO BURN COAL, TO USE A LOWER SULPHUR COAL. THUS, WE HAVE DEVELOPED A FLUE GAS CONDITIONING SYSTEM AT LAMBTON AND NANTICOKE. THIS MODIFICATION WILL ALLOW THESE PLANTS TO BURN COAL THAT HAS A LOWER SULPHUR CONTENT THAN THE COAL THEY WERE ORIGINALLY DESIGNED TO BURN" (THIS MAY BE VERY COMMENDABLE, BUT IT SHOULD BE NOTED THAT NATURAL GAS, AS USED IN NORTHERN ONTARIO, IS VIRTUALLY SULPHUR FREE) "THIRD, WHEN WE HAVE TO BURN HIGHER SULPHUR COAL, WE WILL SCRUB THE EMISSIONS"

(NATURAL GAS IS A CLEAN BURNING FUEL AND DOESN'T REQUIRE ANY SCRUBBING. I ALSO NOTE THERE IS NO MENTION OF NITROUS OXIDE REDUCTIONS. IN THE BOISE CASCADE PROJECT, WE ARE TAKING STEPS TO REDUCE NITROUS OXIDE EMISSIONS).

IN ORDER TO EXPLAIN THE ENVIRONMENTAL BENEFITS OF COGENERATION, WE SHOULD UNDERSTAND THE BENEFITS THE HIGH EFFICIENCY OF A COGENERATION FACILITY CAN BRING TO THE ENVIRONMENT. THIS MORNING, JOHN VALLEY EXPLAINED THE MANNER IN WHICH COGENERATION WORKS.

UTILIZING THE WASTE HEAT OF THE GAS TURBINE TO PRODUCE STEAM AND UTILIZING THE STEAM EXTRACTED FROM THE STEAM TURBINE IN THE MILL PROCESS PRODUCES A HIGHLY EFFICIENT USE OF NATURAL GAS, IN THE ORDER OF 70% TO 80% EFFICIENCY. THIS IS SIGNIFICANTLY BETTER THAN A UTILITY POWER PLANT WHICH MAY HAVE AN EFFICIENCY AS HIGH AS 40%. THIS LOWER EFFICIENCY OF THE UTILITY POWER PLANT IS DUE TO THE FACT THAT ALL THE STEAM IS CONDENSED WITH THE WASTE HEAT GOING INTO THE RIVER, OR THE LAKE, INSTEAD OF TO PROCESS. THIS HIGH EFFICIENCY IS ONE OF THE MAJOR BENEFITS OF COGENERATION. IT MEANS THERE WILL BE FEWER EMISSIONS TO THE ATMOSPHERE. IT MEANS LESS WASTE HEAT BEING FED INTO THE RIVERS AND LAKES OF THE PROVINCE.

IN ADDITION, THE LIMITED SIZE OF THE COGENERATION FACILITY, WHICH IS NECESSARILY SIZED TO MATCH THE HOST INDUSTRY'S HEAT ENERGY LOAD, RESULTS IN LESS HEAT TRANSFER TO THE IMMEDIATE ENVIRONMENT THAN WOULD A LARGE THERMAL STATION. FOR INSTANCE, THE COGENERATION FACILITY AT BOISE CASCADE, BESIDES BEING MORE EFFICIENT, IS ONLY 100 MW VS A SINGLE CANDU UNIT OF 600 MW.

IN ADDITION, THE BURNING OF NATURAL GAS HAS MANY ENVIRONMENTAL ADVANTAGES OVER THE BURNING OF COAL, OIL, OR WOOD CHIPS. FOR INSTANCE, NATURAL GAS HAS VIRTUALLY NO SULPHUR AND, THEREFORE, PRODUCES FEWER SULPHUR BEARING EMISSIONS EVEN LESS THAN A COAL-FIRED PLANT WITH FLUE-GAS CLEAN-UP FACILITIES.

NATURAL GAS IS THE LEAST CARBON INTENSIVE OF THE FOSSIL FUELS. CARBON DIOXIDE PRODUCTION BY COGENERATION IS ABOUT 20% THAT OF COAL FOR THE SAME POWER GENERATION.

VIRTUALLY NO PARTICULATE MATTER IS PRODUCED WITH NATURAL GAS.

NITROUS OXIDE PRODUCTION WILL BE REDUCED AT THE FORT FRANCES FACILITY BY INJECTING STEAM INTO THE COMBUSTION

CHAMBERS IN THE GAS TURBINE AND BY INSTALLING LOW NITROUS OXIDE, HIGH EFFICIENCY BURNERS IN THE HEAT RECOVERY STEAM GENERATOR.

WESTINGHOUSE IS DEVELOPING NEW COMBUSTION METHODS WHICH WILL NOT REQUIRE STEAM INJECTION TO REDUCE THE NITROUS OXIDES.

CLEARLY, COGENERATION, PARTICULARLY WITH NATURAL GAS, IS THE BEST ALTERNATIVE FROM AN ENVIRONMENTAL POINT OF VIEW, WHEN COMPARED WITH OTHER POWER GENERATION STATIONS.

ONE OF THE MAJOR ADVANTAGES OF COGENERATION IS THE MINIMAL IMPACT IT HAS ON THE ENVIRONMENT.

WHAT OTHER BENEFITS DOES COGENERATION HAVE? FOR THE HOST INDUSTRY, COGENERATION PROVIDES A LONG-TERM, SECUPE SERVICE OF HEAT ENERGY AT COMPETITIVE RATES. IT PROVIDES NEW AND RELIABLE FACILITIES. IT PROVIDES INVESTMENT BY OTHERS SO THAT THE HOST INDUSTRY CAN CONCENTRATE ITS INVESTMENT DOLLAR ON THE BUSINESS IT KNOWS BEST.

FOR ONTARIO HYDRO, COGENERATION CAN HELP DELAY THE INSTALLATION OF MAJOR HYDRAULIC AND NUCLEAR POWER STATIONS.

BY CONSTRUCTING THE COGENERATION FACILITY ON EXISTING INDUSTRIAL PROPERTY, A COGENERATION FACILITY CAN BE OPERATIONAL WITH 2 TO 3 YEARS. IT CAN DELAY OR REDUCE THE NEED TO IMPORT POWER FROM OTHER PROVINCES. COGENERATION PROVIDES DECENTRALIZED POWER, REDUCING THE PROBLEMS WITH THE LOSS OF A MAJOR CENTRALIZED POWER STATION AND ALSO REDUCING TRANSMISSION LOSSES.

COGENERATION ALSO MEANS THAT THE COGENERATOR TAKES THE RISK OF THE INVESTMENT AND ITS OPERATION, NOT ONTARIO HYDRO AND ITS RATEPAYERS.

THE FOR PROVINCIAL GOVERNMENT, COGENERATION PROVIDES AN ELECTRIC POWER WITH MINIMAL ENVIRONMENTAL IMPACT. IT PROVIDES ECONOMIC IMPROVEMENTS FOR THE HOST INDUSTRIES.

THE EQUIPMENT THAT IS MANUFACTURED IN ONTARIO HELPS EMPLOYMENT AND THE ECONOMY. IN THE BOISE CASCADE PROJECT, THREE OUT OF THE FOUR LARGE PIECES OF EQUIPMENT COMPRISING THE PROJECT ARE BEING MANUFACTURED IN ONTARIO. WESTINGHOUSE IS MANUFACTURING THE GAS TURBINE AND THE STEAM TURBINE IN HAMILTON. THE HIGH PRESSURE PACKAGE BOILER IS BEING MANUFACTURED BY FOSTER WHEELER IN ITS ST. CATHARINES FACILITY - THE LARGEST UNIT THAT CAN BE PRODUCED IN THAT

FACILITY. THE MAIN HIGH VOLTAGE TRANSFORMERS ARE BEING MANUFACTURED BY N.E.I FERRANTI-PACKARD TRANSFORMERS ALSO IN ST. CATHARINES. THE LARGE HEAT RECOVERY STEAM GENERATOR WAS DESIGNED BY SNC/FW FIRED HEATERS IN CALGARY. IT IS BEING MANUFACTURED MAINLY IN THE UNITED STATES TO MEET THE COST AND SCHEDULE REQUIREMENTS OF THE PROJECT.

IN ADDITION, THERE IS CONSTRUCTION BY THE LOCAL CONTRACTORS. THERE IS ALSO THE ONGOING ACTIVITY AND EMPLOYMENT TO OPERATE AND MAINTAIN THE FACILITY, ALL TO THE BENEFIT OF THE PROVINCIAL ECONOMY.

FINALLY, I WOULD LIKE TO DISCUSS THE ADVANTAGES TO THE GAS UTILITY. IN NORTHERN ONTARIO, THERE ARE A SIGNIFICANT NUMBER OF OPPORTUNITIES FOR COGENERATION. THE BOISE CASCADE PROJECT ADDS 5.0 BCF OF SALES TO THE UTILITY. COGENERATION IN NORTHERN ONTARIO COULD RESULT IN ADDITIONAL SALES OF 50 BCF, MORE THAN A 30% INCREASE IN THE TOTAL SALES OF THE UTILITY. THESE SALES WOULD BE HIGH QUALITY NATURAL GAS SALES, BEING LONG-TERM AND SECURE. THESE ADDITIONAL SALES WOULD RESULT IN THE CONSTRUCTION OF SOME ADDITIONAL PIPELINE FACILITIES, MORE ECONOMIC ACTIVITY, AND LOWER GAS RATES THAN WOULD OTHERWISE BE THE CASE.

IN SUMMARY, COGENERATION HAS ADVANTAGES THAT WILL BENEFIT THE HOST INDUSTRY, THE ENVIRONMENT, ONTARIO HYDRO, THE PROVINCIAL ECONOMY, THE COMMUNITY IN WHICH IT IS INSTALLED, AND THE RATEPAYERS OF THE PROVINCE.

WHY IS ICG PURSUING COGENERATION? THE ANSWER IS TO MAKE WORTHWHILE INVESTMENTS IN WHAT WE EXPECT WILL BE AN EXCITING GROWTH INDUSTRY. ICG HAS OBTAINED, AND IS CONTINUING TO DEVELOP ITS EXPERTISE IN COGENERATION, PARTICULARLY COGENEPATION BASED ON NATURAL GAS. THE TECHNOLOGY IS PROVEN, BUT EACH PROJECT IS DIFFERENT, DEPENDING ON THE REQUIREMENTS OF THE HOST INDUSTRY. THE ECONOMICS DEPEND ON MANY FACTORS, BUT THE TWO MAIN FACTORS ARE THE PRICES PAID BY ONTARIO HYDRO WHICH PROVIDES THE MAJOR SHARE OF THE COGENERATOR'S REVENUES, AND THE COST OF THE GAS SUPPLY, WHICH IS MORE THAN 60% OF THE COSTS OF THE COGENERATOR. ANOTHER MAJOR COST IS THE COST OF THE CONSTRUCTION OF THE FACILITY, WHICH UNDER NORTHERN ONTARIO'S HARSH WINTER CONDITIONS WOULD MORE THAN LIKELY BE CONSTRUCTED IN AN ENCLOSED BUILDING. ONLY SO MUCH CAN BE DONE TO REDUCE THE COST OF THE FACILITIES. IN TODAY'S MARKETPLACE, THE PRICES ARE BECOMING LESS NEGOTIABLE PROVIDING LITTLE ROOM FOR COST REDUCTIONS. NATURAL GAS COSTS DEPEND ON THE COMPETITION IN THE MARKETPLACE, WHICH

TODAY INCLUDES LARGE EXPORT MARKETS IN THE UNITED STATES. IT APPEARS THAT AMERICANS ARE WILLING TO PAY MORE FOR NATURAL GAS THAN CANADIANS, WHICH IS HAVING THE EFFECT OF PUTTING UPWARD PRESSURES ON THE NATURAL GAS PRICES, MAKING THE PURCHASE OF LONG-TERM SECURE SUPPLIES OF NATURAL GAS TIED TO ONTARIO HYDRO RATE ESCALATIONS MORE DIFFICULT. THE OTHER MAJOR FACTOR IS ONTARIO HYDRO'S PRICING FOR POWER FROM PRIVATE GENERATORS WHICH DEPENDS ON THE AVOIDED COSTS OF ONTARIO HYDRO PRODUCING ITS OWN POWER FOR THE SAME MARKET.

IN NORTHERN ONTARIO, ONTARIO HYDRO EITHER MUST TRANSPORT POWER FROM THE BRUCE OR DARLINGTON STATIONS, OR WHEREVER THEIR NEW GENERATING POWER IS ORIGINATING, OR BY CONSTRUCTING NEW HYDRO STATIONS IN NORTHERN ONTARIO, OR BY IMPORTING POWER FROM MANITOBA, OR BY CONSTRUCTING NEW THERMAL STATIONS IN NORTHERN ONTARIO. AT THE MOMENT, THEIR POLICY FOR DETERMINING AVOIDED COST RATES APPEARS TO BE AN AVERAGING PROCESS FOR THE PROVINCE WITH SOME ADJUSTMENTS FOR LOCATION AND PERHAPS OTHER FACTORS. WE BELIEVE THAT A RIGOROUS STUDY OF THE FAIR COSTS OF PROVIDING NEW POWER GENERATION IN NORTHERN ONTARIO WOULD RESULT IN ONTARIO HYDRO PAYING HIGHER PRICES FOR COGENERATION.

THE HIGHER THE PRICES THAT ONTARIO HYDRO IS WILLING TO PAY FOR COGENERATED POWER, THE MORE COGENERATION WILL BE INSTALLED AND THE LONGER ONTARIO HYDRO WILL BE ABLE TO DELAY ITS MORE COSTLY PROJECTS, TO THE BENEFIT OF ONTARIO HYDRO AND ITS CUSTOMERS.

IN CONCLUSION, COGENERATION HAS MANY BENEFITS. THE ADVANTAGES REACH MOST, IF NOT ALL, PEOPLE IN THE PROVINCE, PARTICULARLY ITS ENVIRONMENTAL ADVANTAGES.

IN ORDER TO MAXIMIZE THE ADVANTAGES FAIR PRICES MUST BE PAID BY ONTARIO HYDRO TO THE INDEPENDENT GENERATORS. THESE PRICES MUST REFLECT THE FAIR AVOIDED COSTS OF ONTARIO HYDRO. WE DO NOT BELIEVE THAT TODAY WE ARE BEING OFFERED PRICES BASED ON FAIR AVOIDED COSTS. HOPEFULLY, IN THE FUTURE WE WILL BE - SO THAT THE ADVANTAGES THAT COULD BE OBTAINED BY COGENERATION ARE IN FACT OBTAINED BY COGENERATION - TO EVERYONE'S BENEFIT.

SUMMARY
BY
DR. ROBERT ROSEHART
PRESIDENT
LAKEHEAD UNIVERSITY
THUNDER BAY

ONTARIO ENERGY CHOICES CONFERENCE
THE NORTHERN PERSPECTIVE

THE SHERATON CASWELL HOTEL, SUDBURY, ONTARIO, JUNE 20,1989

ENERGY CHOICES NORTHERN PERSPECTIVE

SUMMARY

Ontarians enjoy one of the highest standards of living in the world and, in many ways, we are a spoiled society, very content with ourselves. Ontarians as individuals want the benefits of our high standard of living, yet prefer to ignore the costs, be they social, cultural, economic or environmental.

However, Ontario is not an island, but rather part of a dynamic global economy where we compete in the world marketplace. Northern Ontario is a particularly unique sub-set of the Ontario situation. In the North, we tend to be more pragmatic and perhaps more realistic of our plight and dependence and vulnerability to world commodity prices. Currently, the relatively low cost of power helps, in part, to preserve our competitive position in the resource sectors.

What will the future hold? For certain, the future will be different from the past (some wish to refuse to recognize this basic statement). In the future, we will need the "socictal discipline" to deal with the "future". We will need to accept the collective responsibility for dealing with future energy needs to allow Ontario to grow and prosper.

Are we ready to deal with the future? I would hope so, but I see danger signs. NIMBY (Not In My Back Yard) is rampant in Canadian society and not just with respect to potential environmental impacts. Current examples involve the location of young offender group homes, nuclear waste and last, but not least, "Toronto's garbage". The often heralded "watts from waste" and resource recovery are no-no's in a future society that insists on being incinerator free. Where is our faith (confidence, or regulatory control) in Technology? To deal with future energy choices, we must also deal with real and perceived societal values.

Northern Development

Today we have heard several specific themes with respect to the use of energy as a vehicle for northern development, and we have heard of some progress being made in this direction. As well, significant opportunities appear to be on the horizon in gas, telecommunications, and electrical transmission distribution systems that could bring both short and long-term opportunities to Northern Ontario. We have heard of new options for our small communities and, in particular, for Native peoples - opportunities, I stress, that must be excercised through consensus and negotiation if they are to be truly realized.

Specifically today, we have heard of demand pressures on electricity and the need to enhance the Northern Ontario distribution system. New generating capacity must be planned, and the participants encouraged the government to get on with the job. It was stressed that "leadership, not politics" was required and that tough decisions would have to be made quickly and objectively (for example, coal or nuclear). Such statements are easy to make but tough to deal with in the real world of politics. The participants were particularly bullish on the prospects for nuclear power generators and encouraged the government to consider a new northern location.

Co-generation experiences presented to the conference were very exciting and point to much growth in this technology in the future. It was particularly encouraging to see the co-operation among Ontario Hydro, the gas utilities, and major industrial users in making co-generation projects a reality. Energy conservation is a given, but there was some feeling that "capital" incentives would be necessary to make significant progress in this area with industry as the "modest" projects have already been undertaken. Load and demand management offer further options to conservation versus the now supply scenario. However, the widespread applicability of such management technology to Northern Ontario has yet to be explored.

Sustainable development was a common theme throughout the day. Good words, to which no one fundamentally objects, but what do they really mean in the context of Northern Ontario? A perspective surfaced that would suggest there needs to be within govenment a more integrated approach to energy planning. There was some suggestion that the current system of planning tends to encourage conflict.

Overall Strategy

Although difficult, I will try to summarize the day's message in a few sentences. Firstly, don't put all of the supply eggs into one basket. There was a strong feeling that our future energy supply (particular reference to electricity) will come from a mix of sources. It is deemed very important to the north (and Ontario) to preserve both the security and reliability of the energy supply as well as, specifically, the relatively low cost power (reference to electricity).

It was felt there was a need to develop a true provincial consensus on our future energy choices involving participation of a wide cross section of Ontarians. It was reinforced that this was a time for strong political leadership and that long-term energy planning cannot be done effectively on a four-year political cycle.

Very clearly, the message to Energy Minister Bob Wong at this conference today is that Northerners will not only be part of the energy demand problem, but also, they wish to be part of the energy supply solutions

Notes for an address by

René Fontaine

Minister of Northern Development

to

Ontario's Energy Choices Conference
(The Northern Perspective)

June 20, 1989
Sudbury, Ontario

Check Against Delivery

It's a pleasure to be with you this evening to officially close this "Energy Choices" conference. I was happy to receive my colleague, Robert Wong's invitation to attend.

Let me congratulate the Ministry of Energy for its initiative in organizing this conference in Sudbury.

Because the North is a significant contributor to the wealth of this province, it is important that we also be part of discussions that consider what choices we must make in the future to sustain this wealth.

Including Sudbury as one of the host sites for an Ontario's Energy Choices Conference recognizes our importance in these deliberations.

Northern Ontario's abundant natural resources form the base of our economy and they will continue to be the anchor for the North's economic performance.

I was encouraged to some degree this morning by Dr. Carl Bay-Gee's evaluation that our mining and forest products industries are already reasonably efficient and competitive on the world scale. That tells me that our economic base is not seriously threatened as being outdated.

However, they are major energy consumers and these future "Choices" we must make, are critical to them. Moreover, we cannot look to them to meet all our job needs and desires. We must continue to seek to develop a broader, more diversified northern economy.

I was also interested to hear Dr. Beigie say that Canada's manufacturing sector has the potential to be an effective player in the future as our trading relationships with the United States change.

Northern Ontario is situated on similar latitudes as the rest of Canada. And we have transportation access to the southern markets as well as East and West. I would hope that we in northern Ontario can pursue development and trade opportunities in manufacturing as vigourously as any other part of this country.

There is no doubt that there are energy choices to be made in the not too distant future. And I would urge that you keep in mind some of the comments made by my colleague, Energy Minister Bob Wong.

There are some myths concerning energy availability in Northern Ontario. We DO NOT have huge amounts of untapped hydro-electric sources in the North. And what is available for development on a significant scale would be very expensive.

Moreover, related environmental and social interests will be a major part of those considerations.

It is a reality today, that resource development in the North draws a large following from people outside Northern Ontario. Whether we like it or not, these are interests who will make sure they are heard and they have to be considered. If we want the rest of the province to consider our input to development direction, we must be ready to listen to their views. Perhaps then, we can more clearly put forward our own.

In the future, our choices will centre on how to maintain our access to necessary energy supplies at affordable rates, while protecting the environment, maintaining levels of prosperity and improving on the competitiveness of northern industry and business.

The Ministry of Northern Development and Mines is looking to the future in co-operation with the Ministry of Energy on some projects in northern Ontario.

As of April 1,1989, the Province successfully negotiated with Ontario Hydro to extend Grid Rates to remote northern communities and to also expand the service to allow households to have greater than 20 amp. service. The price paid by residential customers in remote areas, such as Armstrong is expected to decrease by $50 to $400 a year, depending on electricity use. The cost to commercial customers is forecast to be between 62 and 74 per cent lower.

I heard Joy Neill from Armstrong welcome that improvement but add that her next desire is to see her community move to Grid power supply rather than diesel generation. She says economic development for her community could be aided by removing the impediment of limitations imposed by diesel generated electricity. For her and us in government, the choices or options must be weighed by considerations of cost for benefit and also by examining alternatives.

Industry in Northern Ontario is becoming more aware of the economic benefits of using alternative energy resources such as Co-generation from wood waste and/or natural gas. Such facilities include the Chapleau Co-generation Plant, C.P. Forest Plant in Dryden and the $100-million Boise Cascade Plant at Fort Frances.

A liability guarantee is being provided by the Ministry of Energy and the Northern Ontario Development Corporation for the Boise Co-generation Plant. As you are aware, co-generation is the production of thermal and electric energy from the same fuel, at the same time. In Fort Frances, a natural-gas-fuelled turbine will produce steam to heat the paper mill's giant boilers, and electricity to be sold to Ontario Hydro.

The Boise Cascade Project embraces four government of Ontario objectives: improved energy efficiency, northern economic development, the use of cleaner fuels and the expansion of electrical power supplies by independent producers.

There are a number of other locations currently examining these types of opportunities, both in co-generation and in mini-hydro. The interesting thing about these initiatives is that in addition to bringing on [redacted] additional power supply, they also create economic development opportunity...energy can be a development tool for northern Ontario.

The Ministry of Northern Development and Mines also funded a study by Innovation North and Lakehead University in which a design was made for a prototype energy system. It consists of a small portable wood-fired electric and steam generator for use in remote areas to replace diesel generators. Innovation North received an $87,500 grant to design the generator which will use wood chips for fuel.

Now, I would like to talk about what

this government and my ministry is doing to assist

northern Ontario prepare for the future choices.

Since 1985, through its programs and policies,

the provincial government has been committed

to helping Northerners to diversify their

regional economy.

Communities such as Sudbury are already benefitting from these initiatives. The Northern Ontario Relocation Program is bringing some 1,600 jobs and a payroll of approximately $50 million to five northern communities -- including this city which will have the head office of the Ministry of Northern Development and Mines as well as the Mines and Minerals Research Centre in 1991.

While the Relocation Program will provide an influx of new dollars into the host communities, it will also bring the Ontario government closer to the people of the North -- people like you who have ideas and want to be heard.

The creation of nine Northern Development Councils more than three years ago has provided all regions of the North with a greater voice at Queens Park. The NDCs have been involved in a wide range of issues and in exchanging their views and ideas with me and officials from the ministry.

In the realm of economic development, our approach comprises many aspects. Through the Municipal Economic Development Agency Program, or MEDA, we have provided financial assistance to small and mid-sized municipalities to establish and operate a municipal economic development agency.

This program allocates up to $500,000 over five years to assist municipalities with the pursuit of local economic development opportunities.In the last fiscal year, 12 northern communities have taken advantage of the MEDA Program.

The Northern Ontario Heritage Fund makes available $30 million dollars a year for another 11 years to development interests and efforts. Over the 12 year life of the Corporation more than $360 million will be invested here in northern Ontario in small business development, research and development of new technology in the resource sector, tourism marketing and development as well as special assistance for single industry communities under economic stress.

Maintaining a modern and efficient transportation system is also essential to economy of the North and it will be a part of the considerations on future energy choices. The provincial government has committed to a program of improvements for Highways 69, 17 and 11, our major transportation corridors.

The remote airport program supports all-season access to isolated Northern Ontario communities by funding the construction of new airports.

For many native communities, air transportation is the only access for supplies and other community services. Energy costs in these communities are a major factor in their lives every day. Four airports will be officially opened this year: at Peawanuck, Ogoki Post, Kingfisher Lake and Muskrat Dam.

The Buy North Program was recently introduced to help develop the service industry in the North and to promote the purchase of Northern Ontario goods and services by government and the private sector.

We will publish by the end of July, a guide listing northern suppliers of goods and services with nearly 3,000 business entries. The guide will be made available to all government purchasing departments, public sector agencies, and boards, municipalities, hospitals and major private sector businesses and industry.

I am confident that a lot more purchasing can be done in the North not only by government but by our industry and other large employers.

With a stronger, more vigourous economy in northern Ontario we will be better able to weather the economic cycles ~~that beset us~~. The future will be no less difficult, particularly as the energy related issues weave in and out of the economic picture. But, we can play a greater role directly in preparing for that future, rather than simply being victim, if we have a more diversified base.

Our quality of life and that of future generations depends on the choices we make today.

I commend all of the participants at this conference for their commitment to Northern Ontario and I thank my colleague, Robert Wong, Minister of Energy, for inviting me to address you.

-END-

NOTICE

DUE TO TECHNICAL DIFFICULTIES THREE SPEECHES/PRESENTATIONS ARE NOT INCLUDED IN THIS PACKAGE.

WE WILL ENDEAVOUR, WITH THE KIND CO-OPERATION OF THE SPEAKERS CONCERNED, TO RECONSTRUCT THESE PRESENTATIONS. UPON COMPLETION, AN ADDENDUM WILL FOLLOW.

WE SINCERELY APOLOGIZE FOR ANY DELAY.